

**OUTLINES OF TESTS
SYLLABUS & COURSES OF READING
For
Bachelor of Vocation (Fashion Technology)**

For

Session- 2023-24, 2024-25, 2025-26



**Punjabi University
Patiala**

Jaspreet Kaur
for Head
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(Established under Punjab Act No. 35 of 1961)

SYLLABUS

**OUTLINE OF PAPER AND TESTS
FOR
BACHELOR OF VOCATION FASHION TECHNOLOGY
PROGRAMME CODE-BVFTB3PUP
PART-I (SEMESTER-1ST)
SESSION - 2023-24, 2024-25, 2025-26**

Semester I							
Programme	Paper Code	Name of the Paper	Generic/ Skill Component	Internal	External	Total	Credit
B. VOC FASHION TECHNOLOGY (Programme Code BVFTB3PUP) SEM- I	BVFTB1101T	Punjabi Compulsory/ Punjabi Mudra Gyan	Generic	30	70	100	4
	BVFTB1102T	Communication skills	Generic	30	70	100	4
	BVFTB1103T	Basic Computer Skills	Generic	30	70	100	4
	BVFTB1104T	Sewing Technology	Skill	30	70	100	4
	BVFTB1105T	Textile Science- I	Skill	30	70	100	5
	BVFTB1106L	Design Illustration	Skill	00	100	100	4
	BVFTB1107L	Sewing Technology	Skill	00	100	100	5
Total				150	550	700	30

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BVFTB1101T

Punjabi Compulsory/ Punjabi Mudla Gyan (Theory)

SEM-I

Max. Marks: 70

Min. Pass Marks: 35%

Allowed Time: 3hrs

To download the Syllabus goes to:

For Punjabi compulsory

Punjabiuniversity.ac.in syllabus→ download syllabus→ click here to download syllabus→ Academic Session 2023-24→ Faculty of Language→ Punjabi→ under Graduate courses→ B.Voc, B.M.M, B.T.T, B.H.M, PAPER- Punjabi Com. Part I (Sem 1 & 2). Pdf.

For Punjabi (Mudla Gyan)

Punjabiuniversity.ac.in syllabus→ download syllabus→ click here to download syllabus→ Academic Session 2023-24→ Faculty of Language→ Punjabi→ under Graduate courses→ for under graduate courses common paper PBI. COMP. (MUDLA GYAN) Part -I (Sem 1 & 2) for regular candidates. Pdf

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BVFTB1102T

COMMUNICATION SKILLS (THEORY)

SEM-I

Max. Marks: 70

Min. Pass Marks: 35%

Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

SECTION-A

- **Communication**
Meaning and Objective
Importance and Process
Channels of Communication and Barriers to Communication
Importance of Feedback
- **Interview**
Meaning
Preparing, Appearing, Conducting
C.V. Writing
- **Report Writing**
Meaning and Qualities
Essentials for Report writing
Types of Report
Format and Structures of formal Report writing
Essential parts of Report
- **Speeches & Presentation**
Meaning
Difference between Presentation and Speech
How to find material
Process and Techniques
Factors affecting Presentation
- **Group Discussion**
- **Business Correspondence**

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SECTION-B

- **Personality and Personality Development**

Introduction

Personality Development

Dynamics of Personality

Personality Analysis through body language and Individual habits

- **Self Development skills**

Self esteem and Self-confidence

Thinking and Problems Solving Skills

Stress Management

Goal-Setting

- **Interpersonal Skills**

Hard Skills and Soft skills

Leadership

Social Empathy

- **Emotional Stability**

- **Mental Blocks**

- **Manners and Art of living**

Note: - Language Lab (Reading Skills and Speaking Skills)

Suggested Books:

- Communication skills and Personality Development by T. Singh, New Academic Publishing Co.
- R.Singh, Vandana .The Written Word ,New Delhi: Oxford ,2006
- Sehgal, M.K., Khetarpal, Vandana. Business Communication. New Delhi. Excel Books,2007
- Dutt. A Course in Communication Skills. Bangalore. Cambridge University Press,2008
- Jagota, Subhash. Succeeding through Communication .New Delhi. Excel Books,2007

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BVFTB1103T

BASIC COMPUTER SKILLS (THEORY)
SEM-I

Max. Marks: 70

Min. Pass Marks: 35%
Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

SECTION- A

- Introduction to computer: Definition, Characteristics and Limitations of Computer, generations, Block Diagram of Computer
- Input Devices- key board, mouse, Track ball, touch screen, light pen, scanner and its types
- Output Devices- Monitor, Projector, Printer and its types
- Memories- Memory Hierarchy, Primary Memory-RAM, ROM, Secondary Storage devices- CD, DVD, HD

SECTION- B

- Software-types of software-System Software, application Software, Firmware
- Internet related concepts-Internet, WWW, URL, IP address, Web search engine.
- Introduction to Network, types of networks –LAN, MAN, WAN
- Introduction to Corel Draw. Basic Tools of Corel Draw. Use of color
- Features of Corel Draw.
- Advantages of using Corel Draw.

Suggested Books:

- Peter, Norton. Introduction to Computers. 6th Edition. New Delhi. McGraw-Hill Education, 2012
- Siaw Afriyie, Bright. Introduction to Computer Fundamentals. New Delhi. McGraw-Hill Education, 2007
- Information Technology

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SEWING TECHNOLOGY (THEORY)
SEM-I**Max. Marks: 70****Min. Pass Marks: 35%****Allowed Time: 3hrs****INSTRUCTIONS FOR THE PAPER SETTER**

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

Section-A**A study of Anthropometric / body measurements**

- Equipments required
- Different types of taking measurements for clothing construction
- Care to be taken while taking measurements.

Tools and equipments used in clothing construction

- Measuring Equipments
- Cutting Equipments
- Sewing Equipments
- Finishing Equipment

Introduction of sewing Machines

- History of sewing machine
- Parts and Functions, machines attachments
- Care and Maintenance of sewing machine
- Sewing machine problems and other solutions
- Industrial Sewing Machines

Principle of Sewing

- Selection of needle, thread and stitches according to fabric

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Section- B

Preparation of Fabric for construction -

- Different widths of fabric
- Shrinking and straightening
- Importance of grain in cutting and construction
- Steps in preparing the fabric for cutting

Supporting Fabrics: - lining, interlining, underlining, facing, interfacing

Garment detail: - Plackets, Pockets, Yokes, Fasteners, Trimmings, Pressing

Process of Fullness

- Reducing fullness of garment:-darts, tucks.
- Adding fullness to garment:-Pleats, frills, gather, ruffles.


Safety and Security in tailoring workplace

Terminology: Tailors curve, French curve, Crewel needle, Dummy, chenille needle, Tapestry needle, Trouser stick, Tracing wheel, Grain, Binding, Selvedge, Stay stitching, Facing, Girth, Seat, Seam ripper, Across back, Across front, Shuttle, Binder, Quilter, Bobbin, French seam, Run and fell seam, Pleats, Tucks, Gathers, Corners, Casings, facing, Seam allowances, Ease, Notches, Italian, Inlay, Laying.

Suggested Books:

- Dr. Rajwinder k. Randhawa, clothing, textiles and their care. published: Pardeep
- Dr. Neelam Grewal, Text Book of Home Science (Clothing and Textiles) AP Publishers
- Varinder pal Singh, clothing, textiles and their care. published: Pardeep
- Ms. CHANDANA RAJPUT. Garment construction and pattern making. Published by:- AP PUBLISHERS
- Sewing Technology Krishna Brothers, Jalandher


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TEXTILE SCIENCE-I (THEORY)
SEM-I

Max. Marks: 70

Min. Pass Marks: 35%
Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

SECTION – A

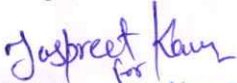
- Classification of Textile Fibers based on their source and origin.
- Manufacturing Process and Properties of different Fibers –
 - a) Cellulosic Fiber- Cotton
 - b) Protein Fibers- Wool and Silk
 - c) Synthetic Fibers- Polyester, Nylon
 - d) Re-generated Fibers- Rayon
- **Basic Terminology-** Staple, Filament, Carding, Combing, Roving, Drawing, Lapping, Silvering


SECTION– B

- Classification of Yarns
 - a) Simple Yarns- single Yarns, strand Yarns, ply yarns, cords yarns
 - b) Novelty Yarns- Slub, flak yarns, flock yarns, boucle nub, chenille
 - c) Textured Yarns- stretch yarns
- Yarn Numbering system, Yarn Twist, Yarn Count
- Yarn Spinning—
 - a) Staple yarns-conventional ring spinning, opened spinning, friction spinning, self-twist spinning, twist less spinning.
 - b) Filament yarns- wet, dry and melt spinning.

Suggested Books:-

- Stephens Frings, Gini .Fashion Concept to consumer .9th Edition. New York .Prentice Hall,2007
- Mike, Essay. Fashion Marketing ,UK.Wiley,2010
- Stone, Elaine. Dynamics of Fashion. 3rd Edition. New York. Bloomsbury Academic, 2008s
- Bhatnagar, Parul. Elementary Textiles. Agra. Abishek Publications ,2002
- Potter, Corbman, Fibers to Fabrics. New Delhi ,Tata Mac Graw Hill,1967
- Vilensky. Textile Science.Delhi,CBS,1983
- Varinder Pal Singh, Kanwar. Introduction to Textile. Ludhiana, Kalyani Publications,200


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DESIGN ILLUSTRATION (PRACTICAL)
SEM-I

Max Marks: 100

Min Pass Marks: 35%

- Make geometric figures 8-1/2, 10 and 12 heads, front back and ¾ profiles and fleshing on geometric figures.
- Face analysis.
- Draw features eyes, nose, ear, lips, face, hands, arms, feet, legs and hair style.
- Sketching of stick figures in different poses.
- Detail in study in pencil and color with light and shade of different type of folds, gathers and shape of Fabrics in dresses.
- Drawing of jewellery.
- Depicting various silhouettes on fashion figures.

Suggested Books:

- Dawber, Martin. Book of Fashion Illustration .UK.Batsford,2007
- John, Patrick. Fashion Design Illustration .UK.Batsford,1996
- Allen, Anny, Seaman. Fashion Drawing The Basic Principals .UK.Batsford,1993
- Fashion drawing – magazine of Thailand
- All volumes and kiddys

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SEWING TECHNOLOGY (PRACTICAL)
SEM I

Max Marks: 100

Min Pass Marks: 35%

Basics Samples:

- Stitching Samples Straight, Circular, Square, Spiral curvilinear & chevours
- Seams and seam finishes- plain lap, run and fell counter hem piped, pinking, over locking & turned & stitched.
- Basting Straight (running and tacking) Diagonal, tailor's tack
- Hemming Vertical (Invisible), lips Stitching, blind Stitching
- Facings & binding round, square, 'V' Shape and shaped necklines.
- Plackets and Fasteners- Two piece (kurta placket and blouse placket), one piece extended bodice, zipper placket.
- Fullness treatment gathers into a band, smoking tucks, darts pleats.
- Application of different types of trimmings- laces, piping, bindings, appliqué.
- Different types of Necklines.

NOTE- Students will be make three articles using above techniques.

Suggested Books:

- Indian Craft by saroj D.N Publisher Vikas
- Technology of Indian Embroidery by Mavel a Publisher Bots ford.
- Crafine art of embroidery " By Snoop Brbare Publisher Numbity
- Embroidery Designs "By Nirmala C Mistry Publications Navneet".

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Semester II							
Programme	Paper Code	Name of the Paper	Generic/ Skill Component	Internal	External	Total	Credit
B.VOC FASHION TECHNOLOGY (Programme Code- BVFTB3PUP) SEM- II	BVFTB1201T	Punjabi Compulsory/ Punjabi Mudla Gyan	Generic	30	70	100	4
	BVFTB1202T	Concept of Fashion	Skill	30	70	100	4
	BVFTB1203T	Pattern making & Construction Technology	Skill	30	70	100	5
	BVFTB1204T	Textile Science-II	Skill	30	70	100	4
	BVFTB1205T	Fundamentals of Design	Generic	30	70	100	4
	BVFTB1206L	Pattern Making & Construction Technology	Skill	00	100	100	5
	BVFTB1207L	Office Operation & Presentation	Generic	00	100	100	4
	BVFTB1208T	**Drug Abuse: Problem, management & Prevention (Theory)	Generic	compulsory qualifying paper as per for university guidelines			
Total				150	550	700	30

**BVFTB1208T Drug Abuse: Problem, management & Prevention (Theory) is compulsory qualifying paper as per for university guidelines, the marks of this paper are not conducted for the total marks for the degree.

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BVFTB1201T

Punjabi Compulsory/ Punjabi Mudla Gyan (Theory)

SEM-II

Max. Marks: 70

Min. Pass Marks: 35%

Allowed Time: 3hrs

To download the Syllabus goes to:

For Punjabi compulsory

Punjabiuniversity.ac.in syllabus→ download syllabus→ click here to download syllabus→ Academic Session 2023-24→ Faculty of Language→ Punjabi→ under Graduate courses→ B.Voc, B.M.M, B.T.T, B.H.M, PAPER- Punjabi Com. Part I (Sem 1 & 2). Pdf.

For Punjabi (Mudla Gyan)

Punjabiuniversity.ac.in syllabus→ download syllabus→ click here to download syllabus→ Academic Session 2023-24→ Faculty of Language→ Punjabi→ under Graduate courses→ for under graduate courses common paper PBI. COMP. (MUDLA GYAN) Part -I (Sem 1 & 2) for regular candidates. Pdf

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BVFTB1202T

CONCEPT OF FASHION (THEORY)
SEM-II

Max. Marks: 70

Min. Pass Marks: 35%
Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

SECTION – A

- Introduction to Fashion, Principle of Fashion, Fashion Psychology
- Fashion Cycle, Factors influencing Fashion
- Sources of inspiration for fashion designer-History, media, films, theatre.
- Factors affecting Fashion and Fashion forecasting in fabric, trend, style, color.
- Brands and their influence on forecasting
- Theories of Fashion adaption-Traditional Fashion Adoption (Trickledown Theory), Revers Adoption(Bottom Up Theory), Mass Dissemination (Trickle across Theory)
- History and Theories of Clothing selection-(a)Origin of Clothing, (b) Modesty Theory, (c) Protection Theory
- Fashion Terminology – Fashion, Style , Fed, Classic, Trendies, High Fashion, Haute Couture, Designer, Mass Fashion, Display, Design, Accessories, Fashion Consultant, Fashion Cycle, Fashion Forecast, Fashion Show, Fashion Trendies, Vogue, Ready Tower

SECTION – B

- Clothing Psychology- role of clothing in physical, social, cultural scenario
- Human behavior and clothing, Clothing and gender differentiation
- Factor affecting the selection of clothes
- Clothes for different age groups-infants, adolescents, adults, clothes for the elderly
- Clothing needs for Physically challenge
- Personality and Self Concept

NOTE- An Assignment on National and International designer of 20th and 21st century – Their Profile collection and contribution to fashion work.

Suggested Books:-

- Stephens Frings, Gini Fashion Concept to consumer .9th Edition. New York .Prentice Hall,2007
- Mike, Essay. Fashion Marketing, UK.Wiley, 2010 Stone, Elaine. Dynamics of Fashion .3rd Edition. New York. Bloomsbury Academic, 2008
- Psychology of clothing by J.G, Flugel
- Concepts of Clothing by Marry, Rose & Cranx

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BVFTB1203T

PATTERN MAKING & CONSTRUCTION SKILLS (Theory)
SEM- II

Max. Marks: 70

Min. Pass Marks: 35%
Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

SECTION – A

- Introduction of Pattern Making and Tools used in Pattern making.
- Importance of Pattern\ Drafting: sequence of Pattern\drafting, consideration while Pattern\drafting
- Precautions/ Points to kept in mind while making Patterns. Benefits of paper Pattern Making
- Method of Pattern Development –Flat pattern, Slash and spread and pivot methods
- Basics of Commercial paper pattern- Pattern envelope, Pattern marking, Pattern Layout
- Altering patterns – lengthwise and shortening pattern, bust alterations, waist and hip alterations, shoulder back and sleeve alteration
- Grading- types of grading, principle of grading

SECTION – B

- Layout/Fabric estimation and its importance.
- Fitting: good fitting principles, fitting problems and their solution.
- Draping introduction, equipments required, draping procedure, marking, trueing,
- Advantages and disadvantage of draping.
- Difference between drafting, pattern making and draping.
- Basic Terminology:- paper pattern, templates, seamless pattern, block, Grain Line, corollary, working pattern, production pattern, design specification sheet, cost sheet, land marks, working pattern, grading, Bust point, balance, notches, draping, ease, dart, truing and binding, pattern plot pivotal point, bias cut, flat pattern making,

Suggested Books:-

- Allyne, Bane. Flat Pattern Design. USA, Tata Mcgraw Hill,2009
- Martin M.Shoben. Pattern cutting making up. New Delhi, CBS Publishers, 1996
- PamilaC. Ruction Stinger .Pattern drafting for dress making. Delhi, Augustan Publissers,1995
- Garment Construction And Pattern Making (Fashion Designing), by Chandana Rajput, AP Publishers, Jalandher.

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TEXTILE SCIENCE-II (Theory)

SEM- II

Max. Marks: 70

Min. Pass Marks: 35%

Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

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INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

Section-A

Techniques of fabric construction:

- **Introduction to Basic loom and its parts.**
- **Introduction and classification of weaves -**
 - a) **Plain weave** – Rib weave, Basket, Twill, Satin, Sateen
 - b) **Decorative weave** – Pile, Double cloth weave, Leno, Dobby and Jacquard weave.
- **Different types of knitting:**
 - a) **Weft Knitting**-Plain Knit, Purl knit, Rib Knit.
 - b) **Warp Knitting**-Tricot Knit, Raschel Knit, Ketten Rachel Knit, Milanese Knit, Crochet, Jacquard Knit.
- **Comparison of Knitting with Weaving.**
- **Non-Woven Fabrics:**
 - a) Felting
 - b) Bonding

SECTION -B

- **Classification of Finishing Process:-**
 - a) **Stabilizing Finishes**-Tentering, Sanforizing, Mercerization, Ammoniating.
 - b) **Textural Finishes**-Calendaring, Beetling, Glazing, Sizing or Stiffening , Weighting, Napping Moiring, Embossing
 - c) **Functional Finish**-Crease-resistant Finish, Water-proof and water-repellent finish

Application of color on Fabric: -

- **Dyeing**
 - a) Natural and Synthetic dyes
 - b) Industrial Dyeing and Household Dyeing
- **Printing**
 - a) Direct Printing, Resist Printing, Discharge Printing
 - b) Machine Printing-Roller Printing, Screen printing, Transfer printing, Pigment Printing , Flocking
 - c) Hand Printing-Block Printing, Stencil Printing, Screen Printing

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Suggested Books:-

- Pradeep's Clothing, Textiles and their Care, Dr. Rajwinder K. Randhawa
- Vilensky. Textile Science. Delhi, CBS, 1983
- Textile Fibre to Fabric Mc GRAW-HILL international edition
- Potter, Corbman, Fibers to Fabrics. New Delhi, Tata Mac Graw Hill, 1967
- Kaplan, N.S. Practical Guide Fiber Science. New Delhi, Abishek, 2003

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BVFTB1205T

FUNDAMENTAL OF DESIGN (Theory)
SEM- II

Max. Marks: 70

Min. Pass Marks: 35%
Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

Section-A

- **Design definition** – Meaning, Importance, Concept and aspects of design
Classification of design-
 - a) Applied design- Painting, Embroidery, Dyeing, Printing and Finishing
 - b) Structural design- Through variation in fiber, yarn, fabric construction and Development
- **Study of different motifs of textile design**- Natural, Decorative, Geometric and Abstract
- **Importance & Role of every element in design**- Line, Color, Shape, Texture, Value
- **Importance and role of Principles of design**- Proportion, Repetition, Balance, Rhythm, Symmetry, Variety, Unity, Gradation, Emphasis, Dominance & Sub dominance
- **Designs in Fabric**- motifs and patterns, types of motifs, understanding layouts and repeats of patterns in garments, importance of fabric design in garment construction, effect of fabric design on body appearance

SECTION:-B

- **Definition and Classification of colors:**
 - a) Dimensions of color- Hue, Intensity, Value
 - b) Aspects of color- warm, Cool, Hot, Cold, Dark, Pale, Bright
 - c) Role of color in designing
- **Concept of design process-**
 - a) Research in relation to design
 - b) Exploration and Conceptualization of design
 - c) Design development worksheet
- **Define collage:** Types of collage
- **Texture**
 - a) Understanding of texture effects
 - b) Types of Texture, effects, using textures in design

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Suggested Books:

- Color Harmony a Guide to creative color combinations-Bride M.Whelan
- Designer guide to color-Volume - 1 - 5 –James Stockton
- A Basic Study-Bhagwat Gajanan
- Basic Design & Anthropometry-S.V. Bapat

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BVFTB1206L

Pattern Making & Construction Technology (Practical)

SEM- II

Max Marks: 100

Min Pass Marks: 35%

Study of body measurements and Standardization size Chart for Children.

Drafting and Pattern:-

- Creation of Bodice block and a sleeve block for a child.
- **Sleeve:-** plain sleeve, Puff Sleeve, Cap Sleeve, Bell Sleeve, Umbrella Sleeve, Flared Sleeve, Tulip, Hanky, Magyar, Kimono.
- **Collars:-** peter pan, two-piece peter pan, bishop, cap, Chinese, flat tennis.

Drafting and Construction of the Following:-

- Panty, Bloomer
- Romper
- Sundress
- Night Suit
- Child's Frock (A-Line Frock, Gather Frock, Party wear frock)
- Suit with salwar

Suggested books:

- Drafting & Draping by Manmeet Sodhia Publication Kalyani
- Basic Process and Clothing Construction by Shree Doongaji and Roshani Desh Pande Publisher Unique Education Books. Raj Parkashan. New Delhi.
- Garment Construction Skills"By Mullick Premlata.

Cream Panelope. The Computer Book of Sewing- A Practical Step by Step Guide to Sewing Technique.

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BVFTB1207L

OFFICE OPERATION & PRESENTATION (PRACTICAL)

SEM- II

Max Marks: 100

Min Pass Marks: 35%

Course Objectives and contents

Upon completion of this course students will be able to:

- Demonstrate an advanced knowledge of the Word Processing package, MS Office and knowledge of how to design & create effective and structure documents like technical report, letter, brochures, etc.
- Demonstrate the skills in the appropriate use of various features of the spread sheet package MS Excel and also to create useful spreadsheet applications like tabulated statements, balance sheets, statistical charts, business statements, etc.
- Demonstrate the skills in making an effective presentation with audio and video effects.
- Draw graphical pictures, flow charts, block diagrams etc., using the drawing tools available in MS Word or MS Power Point and incorporate them into documents and presentations.

Suggested Books:

- Microsoft Office Word by Torben Lage Frandsen
- Word 2010 Introduction by Stephen
- Word 2010 Advanced by Stephen Moffa

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BVFTB1208T

****DRUG ABUSE: PROBLEM, MANAGEMENT & PREVENTION (Theory)**

Syllabus as per university guidelines

*** Qualifying Exam

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SYLLABUS

BACHELOR OF VOCATION (FASHION TECHNOLOGY)

PROGRAMME CODE- BVFTB3PUP

PART-II (SEMESTER-3rd)

SESSION - 2023-24, 2024-25

Semester III							
Programme	Paper Code	Name of the Paper	Generic/ Skill Component	Internal	External	Total	Credit
B VOC FASHION TECHNOLOGY (Programme Code BVFTB3PUP) SEM- III	BVFTB2101T	Garments Care and maintenance	Generic	26	74	100	4
	BVFTB2102T	Fundamental of Economics	Generic	26	74	100	4
	BVFTB2103T	Indian traditional textiles & Embroideries	Skill	26	74	100	4
	BVFTB2104T	Principles of Marketing	Generic	26	74	100	4
	BVFTB2105L	One Month Training	Skill	00	100	100	4
	BVFTB2106L	Indian traditional textiles & Embroideries	Skill	00	100	100	5
	BVFTB2107L	Textile Science	Skill	00	100	100	5
Total				104	596	700	30

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BVFTB2101T

GARMENTS CARE AND MAINTENANCE (Theory)
SEM III

Allowed Time: 3 Hrs.

Max Marks: 74

Min Pass Marks: 26

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 11 marks. Section C will consist of one compulsory question having 10 short-answer typed questions carrying 3 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

SECTION- A

- Methods of Laundering- Principles of washing- suction washing, washing by kneading and squeezing, washing by machine - Process details and machine details.
- Soaps and detergent- Composition, types, quality and cleaning action of soap and detergents.
- Laundry equipment for storage, for steeping and Washing – Wash board, suction washer, wash boiler, washing machine. Drying equipments – outdoor and indoor types. Irons and ironing board – Types of iron (box, flat, automatic, steam iron). Ironing board – different types.
- Laundering of different fabrics – cotton, wool, silk, synthetic garment.
- Selection and care of Linen: selection and storage of household linen.

SECTION-B

- Stain Removal: Food stains, lead pencil, lipstick, mildew, nose drops, paint, perfume, perspiration/ mildew, tar, turmeric and kum- kum, general rules & ways of stain removal.
- Care labels – washing, bleaching, Drying, ironing and different placements of label in garments.
- Starches and Blues- types and uses.
- Bleaches- Types and applications.
- Dry-cleaning - definition and its types.

Suggested books

- Textiles fabrics and their Selection – Wingate I B, Allied publishers Ltd, Chennai.
- Fundamentals of Textiles and their Care- Susheela Dantyagi, Orient Longmann Ltd (1980).
- Family Clothing – Tate of Glession, John Wiley & Sons Inc, Illinois.
- Clothing and Textiles

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BVFTB2102T

Fundamental of Economics (Theory)

SEM-III

Times Allowed: 3 Hrs.

Max. Marks: 74

Min. Marks: 26

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Sections C will have 10 short-answer type questions carrying 3 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section-A

1. Money
 - (a) Meaning and importance of Money - types of money.
 - (b) Functions of money.
2. Bank
 - (a) Commercial Banks and Central Bank.
 - (b) Functions of Commercial Banks
3. Taxation
 - (a) Meaning and type of taxes.
 - (b) Direct and Indirect tax
4. Credit schemes for apparel industries and boutiques.

Section-B

5. Introduction to Accounting, Accounting Nature, Importance and scope of accounting, Relationship Accounting and Book Keeping Branches of Accountings
6. Users of accounting information
7. Forms of business organization
8. Double entry bookkeeping, Accounting Cycle

SUGGESTED BOOKS:

- Indirect Tax, by Neeraj Goyal, Vaneeta Goyal, Kalyani Publishers
- Money and Banking, by DR. R.R. Paul, Kalyani Publishers
- Income Tax Law and Practice, by V.P Gour, D.B. Narang, Puja Gaur, Rajeev Puri, Kalyani Publishers
- Financial Accounting by Mohan Juneja, J.S. Arora, Manav Aggarwal, Kalyani Publishers.

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BVFTB2103T

INDIAN TRADITIONAL TEXTILES & EMBROIDERIES (Theory)

SEM III

Max. Marks: 74
Min. Marks: 26

Time Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Sections C will have 10 short-answer type questions carrying 3 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section-A

- 1) **Traditional textiles of the Northern region-**
 - Jammu & Kashmir – Kashmir shawls
 - Punjab – Phulkari and bagh
 - Himachal Pradesh – Chambaramal
 - Uttar Pradesh – Chikankari of Lucknow
 - Brocades of Varanasi
- 2) **Traditional textiles of the Western region-**
 - Gujarat – professional and domestic embroideries, beadwork. Printings- Block printing, screen printing, ajarakh, mata-ni-pachedi. Roghan work, mashru, patola, and Surat zari craft.
 - Rajasthan – Bandhani, Leheria, Block printing, Pabuji par, and ply-split camel girths.

Section- B

- 3) **Traditional textiles of the Eastern-**
 - Bengal and Bihar – Dacca muslins, Jamdani, Baluchar Butedar, Kantha work and sujani work.
 - Odisha – Ikat and pipili work.
- 4) **Traditional textiles of the Southern Region-**
 - Andhra Pradesh – ikats of Pochampalli, teliarumal, and kalamkari Tamil Nadu – Kanchipuram silks
 - Karnataka – Kasuti embroidery, ilkalsarees, and banjara embroidery Kerala and Goa
 - Maharashtra – paithani saris, himru and pitambar
 - Madhya Pradesh – chanderi and maheswari saris

Suggested books:

- Gillow.J & Barnard. N- (2014)- Indian Textiles- Om Books International- New Delhi
- History of Fashion by Manmeet Sodhiya, kalyani publishers
- National Institute of Fashion Technology- (2015)- Textiles and crafts of india- Arunachal Pradesh, Assam, Manipur- Prakash Books, New Delhi
- Sahay. S- (1998)- Indian Costume, Coiffure and Ornament, Cornet Books
- Mohpatra R.P- (2003)- Fashion Styles of Ancient India- BR Publishing Corporation
- Ghurye G.S- (2008)- Indian Costume- Popular Prakashan
- Technology of Indian Embroidery “ By Marel A. Publisher Bats ford.

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BVFTB2104T

**Principles of Marketing
Sem-III**

**Max. Marks: 74
Min. Marks: 26**

Time Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Sections C will have 10 short-answer type questions carrying 3 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section A

- 1. Nature and Role of Marketing**
 - a. Marketing Concept
 - b. Marketing Environment
 - c. Marketing Segmentation
- 2. Principles of Marketing**
- 3. Product Mix**
 - a. Product Life Cycle.
 - b. Development of new product
 - c. Branding, labeling & packaging
- 4. Marketing Planning & Process**
- 5. Factor affecting Fashion Industry**
- 6. Pricing**
 - a. Product pricing & strategies

Section B

- 1. Distribution System**
 - a. Channels of Distribution – Types and Functions – Role of Middleman.
 - b. Choice of Distribution System with Reference to Clothing.
- 2. Sales, Promotion**
 - a. Sales Promotion Strategies
 - b. Publicity & public relations
 - c. Good salesmanship
- 3. Marketing Research to study Consumer Demand**
 - a. Consumer behavior
 - b. Determinants
 - c. Types
 - d. Buying motions
- 4. Marketing Terms-** Market, Niche Market, Target market, Vender, Supplier, Market research, Sales, Brand, labeling, packaging, Buyer persona, Inbound marketing, outbound marketing, Social media marketing, Email marketing, content marketing, Omni channel marketing.

Suggested books:

- Amarchand, D. and Varadarajan, B.: An Introduction to Marketing Management, (1981), Vikas Publishing House Private Ltd.
- Davar, R.S.: Marketing Management, Bombay, (1982), Progressive Corporation Private Limited.
- Sherlaker S.A.: Marketing Management, Delhi. (1982), Himalaya Publishing House.
- Fashion Marketing, Third edition, by Mike Easey, (Wiley- Blackwell)

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BVFTB2105L

One Month Training (Practical)

SEM III

Time Allowed: 3 Hrs.

Maximum Marks: 100

Objectives-

- To impart knowledge on working of apparel industry
- To gain practical knowledge on different departments apparel industry
- To gain knowledge of self employed
- In depth of knowledge of textiles and handcrafts
- To learn research and documentation of various Indian crafts by visiting and meeting the craftman and artisans personally.

Industrial Training Report/ Craft Documentation/Fashion house

- A visit to any garment /textile industry/ export or import house / craft cluster/ Fashion house
- Duration 4-6 weeks.
- Submission of the training report

Documentation should contain the following

- Introduction
- Aim
- Objectives
- Hypothesis
- Procedure
- Design
- Pictures of Crafts/work
- Information Collection
- Results and conclusion
- Bibliography

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BVFTB2106L

INDIAN TRADITIONAL TEXTILES AND EMBROIDERIES (Practical)

SEM III

Max Marks: 100

Min. Marks : 35

- **Introduction to Needle craft tools and equipments used in needle craft-**
Stem, back, running, chain, lazy daisy, blanket, buttonhole stitch, spider's web, fly, French knot, bullion knots, Fish bone, Romanian, satin, long & short stitch chevron and herringbone
- **Introduction to Indian traditional embroidery stitches-**
Phulkari, Kantha, Chikankari, Sindhi, Kasida, kasuti, Chamba, Kutch
- **Surface Ornamentation**
 - Appliqué Work
 - Mirror Work
 - Patch work
 - Ribbon Work
 - Smocking
 - Quilting
 - Shirring
- **Crochet-** Single, Double, Treble
- **Knitting-** Basic, Purl, Rib, Stocking

Suggested Books

- "Indian Costumes" By Gurey G. S, Publisher Popular Book.
- "Ancient Indian Costumes" By Roshan Alkazi.
- "Periods of Centralization and Development of Dressing in India" By Wlex A.

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BVFTB2107L

TEXTILE SCIENCE (Practical)

SEM III

Max Marks: 100

Min. Marks : 35

1. Fibre Identification Test - Microscopic, Burning test
2. Scouring and Bleaching of cotton
3. Colour Fastness to - Pressing (Dry and Wet), Laundering and Crocking.
4. Yarn count, direction & amount of twist.
5. Making of samples using different techniques: Weaving, Macramé (using variety of material like different kinds of yarns, fibers, threads and ropes, ribbons, braids, trimmings, paper, fabrics or any other such material)
6. Learning traditional techniques of weaving narrow fabrics using Traditional Tape weaving (Naala making) and Braiding
7. Stain Removal.
8. Visit to Textile industry

Suggested Readings

- Textiles: Fiber to Fabric 6th Edition, Bernard P. Corbman, "International students" edition, McGRAW Hill International Edition book co Singapore (1985). Textile chemistry, Peters. R. H. Vol i, ii, textile institute Manchester 1970.
- Technology of textile processing, Shenai. V. A. Vol i, ii, v, vii, sevak publications, Bombay, 1981
- Textile Science 2nd Edition, E. P. G. Gohl & L. D. Vilensky, CBS Publishers and Distributors 2006
- Fabric science, 5th edition, Joseph. J. P. Et. al. Fairchild publications, New York, 1990
- Norman Hollen and Jane Saddler, "Textiles" Second Edition. (1949), The Macmillan Company, New York. Colliie-Macmillan Limited, London.

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Semester IV							
Programme	Paper Code	Name of the Paper	Generic/ Skill Component	Internal	External	Total	Credit
B VOC FASHION TECHNOLOGY (Programme Code BVFTB3PUP) SEM- IV	BVFTB2201T	Garment Production Management	Generic	26	74	100	6
	BVFTB2202T	Personality development and communication skills	Generic	26	74	100	6
	BVFTB2203T	History of Indian Costumes	Skill	26	74	100	3.5
	BVFTB2204L	Clothing Construction Techniques	Skill	00	100	100	4
	BVFTB2205L	Draping Methods	Skill	00	100	100	3.5
	BVFTB2206L	Fashion Presentation	Skill	00	100	100	4
	BVFTB2207L	Computer Aided Fashion Design	Skill	00	100	100	3
Total				78	622	700	30

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BVFTB2201T

GARMENT PRODUCTION MANAGEMENT (THEORY)

SEM- IV

Max. Marks: 74

Min. Marks: 26

Time Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Sections C will have 10 short-answer type questions carrying 3 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

SECTION-A

- 1. Organization of Apparel Industry**
 - Structure and Sector of Industry
 - Factors affecting the structure
- 2. Principles of Management**
 - Planning types and strategies
 - Project Planning and Control
- 3. Production Section**
 - Production system
 - Production planning
 - Plant layout
- 4. Testing of Fabric and Garments**
 - Fabric Inspection
 - Garment Inspection

SECTION – B

- 5. Finishing of garments**
 - Pressing
 - Trimming
 - Packing
- 6. Dispatch Department**
 - Meaning and Functions
- 7. Industrial Engineering concepts in improving apparel productivity in brief.**
 - Work study and standard time control.
 - Balancing
- 8. Quality Control in Production –**
 - Introduction Importance
 - Tools for quality control

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Suggested Books:

- Garment Technology for Fashion Designers by Gerrycooklin
- Introduction of clothing Production Management by A. J.Chutler
- Quality control in Apparel Industry by P.V. Mehta
- Guide to Apparel Manufacturing by Peyton B, Hudson, Publisher Blackwell.

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BVFTB2202T

PERSONALITY DEVELOPMENT & COMMUNICATION SKILLS-II (THEORY)

SEM-IV

Max. Marks: 74

Min. Marks: 26

Time Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 10 short-answer type questions carrying 3 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section – A

Personality- Definition, Types

Personality and Self Concept

Personality Development

- Important & Scope of personality development.
- Handling inferiority & superiority complex, doubt, fear & depressions. Positive thinking & negative thinking, self- confidence.
- Self presentation to prospective clients / colleagues/ seniors/
- Techniques to produce influence & convince others.

Section – B

Communication Skills

- Essentials of Grammar :- parts of speech, punctuation, vocabulary building, phonetics
- Office management :-Types of correspondence, receipt : dispatch of mail, Role & function of correspondence.
- Letter & resume writing :- Types of letters :- Formal/Informal, Importance & Function.
- Drafting the applications.
- Presentation Skills :- importance of presentation skills
- Guidelines to make presentation interesting, Body language
- Forms of layout
- Interview preparation :-Types of interview, preparing for the interviews, attending the interviews, Postures & gestures.
- Group discussion & presentation :-Definition , process & guidelines.

Suggested Books:

- New Aspects of Personality Development And Communication Skills - Ram Sharma
- Personality Development And Soft Skills- Barun K. Mitra

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BVFTB2203T

HISTORY OF INDIAN CONSTUMES (Theory)

SEM- IV

Max. Marks: 74

Min. Marks: 26

Time Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 10 short-answer type questions carrying 3 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section-A

History and theories of clothing-

- Origin Theory
- Modesty Theory
- Protection Theory
- Indus valley civilization.
- Mourayans and sanga period
- Kushan period.
- Gandhara period.
- Gupta period
- Medieval period.
- Mughal.
- British.

Section-B

- Punjab
- Rajasthan
- Himachal Pradesh
- Gujarat
- Jammu and Kashmir
- Maharashtra

(Identify distinguishing costume terminology throughout history and characteristics of each period and of every state mentioned above. Describe silhouettes, colors, fabrics, and accessories used for human adornment in different time Periods and same for states).

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Suggested Books:

- Biswas, Indian Costumes, (2003), Publication Division
- "Ancient Costumes" By Gurey G. S, Publisher Popular Book
- "Ancient Indian Costumes" By Roshan Alkazi
- "Periods of Centralization and Development of Dressing in India" By Wlex A. Bradley C.(1970)
- History of World Costume, London, Peter Owen Ltd
- Boucher F. (1966) A History of Costume in the West, London, Thames and Hudson
- Parul Bhatnagar, Traditional Indian Costumes and Textiles, (2004), Abhishek Publications
- Ritu Kumar, Costumes and Textiles of Royal India, (1999), Christie's Boo
- History of World Costumes and Fashion, Daniel Delis Hill, foreword by Jonne B. Eicher

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Neeraj

BVFTB2204L

Clothing Construction Techniques (Practical)

SEM-IV

Max. Marks=100

Min. Marks=35

Design, Draft and construct the following garments.

- Skirt: Full circle, half circle, A- line, Gathered skirt, Novelty Gathered.
- Top—Front open, single dart, with or without collar and variation in sleeves.
- Night dress—Maxi, night suit, nighty with gown.
- Salwar - Gathered waist with tape or elastic, bottom design variation, with and without belt.
- Kameez - Fashioned neck, variation in sleeve.
- Ladies pant /Plazo : pant plazo, circular plazo, straight plazo
- Party wear dress: Lehnga choli, Gown, Designer suit
- Apron

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Veeru

BVFTB2205L

DRAPING METHODS (PRACTICAL)

SEM-IV

Max Marks: 100

Min Pass Marks: 35

Introduction to draping

- Tools & Equipments used in Draping
- Draping Dresses:-The Straight Shift, Princesses Dress Basic draping Methods-Bodice Front and Back, Skirt Front and Back
- Draping, Collars, Cowls, Yokes, Fullness
- Development of Choli converting the same into garment Draping of designer Choli and evening gown.

Grading Techniques- Introduction to grading and its importance

- Introduction to different methods of grading in Front Bodice, Back Bodice, Sleeve Block.

Dart Manipulation: Shifting dart to different positions- Slash and Spread Method, Pivotal Technique

Suggested Books:

- Pattern making for fashion design' by Helen Joseph Armstrong
- Draping for fashion design' By Jaffe Hilde and Relis Nuire
- Dress design: draping and flat pattern making', M.S Hill house

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Veer

FASHION PRESENTATION-(PRACTICAL)

SEM-IV

Maximum Marks: 100

Min Marks: 35

Creating

- Mood Boards- Its application in designing costumes
- Theme Boards-Its direct relation to creating designs of costumes
- Clint Boards-the study of peculiar characteristics of a client to design special costume for him/her
- Swatch Boards-Use of swatches in surface texture of the design costumes
- Creating lines-lines with similar themes, similar fabrics & similar surface ornamentations
- Theme based illustrations-Themes could be picked up from nature, surroundings, objects, events, celebrities, sports, jewellery, toys
- Clint based designing of a garment.

Designing male and female apparels using any of the following categories themes

- Business wear/career/suits
- Dresses
- Outer wear
- Evening wear
- Swimming & Lingerie
- Bridal
- Night wear
- Maternity wear
- Sports wear
- Fashion illustration using different accessories etc
- Designing jewellery- Using various mediums

Suggested Books:

- Dawber ,Martin.Big Book of Fashion Illustration .UK.Batsford,2007
- John,Patrick.Fashion Design Illustration .UK.Batsford,1996
- Allen,Anny.,Seaman.Fashion Drawing The Basic Principales .UK.Batsford,1993
- Color Harmony a Guide to creative color combinations-Bride M. Whelan
- Designer guide to color-Volume - 1 - 5 -James Stockton
- Basic Design & Anthropometry-S.V. Bapat
- Colour Harmony -A Guide to creative colour combinations by Hideaki Ghijir

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BVFTB2207L

Computer Aided Fashion Design (Practical)

Sem-IV

Max. Marks=100

Min. Marks=35

- Introduction to Corel draw and tools.
- Importance and Uses of Corel Draw for Designers.
- Bitmap and Vector Images
- Application of various textures and Patterns.
- Drawing of fashion figure using different tools.
- Knowledge of export/save graphics.
- Create textures, prints design in Corel.
- Colour Palette and printing
- Introduction to Photoshop and its importance
- Tools of Photoshop
- Opening the Photoshop
- Concept of Path, layers
- Creating logos, collage, brochures, fliers, story board, mood board, labels, visiting cards.

Suggested Books:

- "Introduction to Computers" By Norton, Peter.
- "Introduction to Computer Fundamentals" By Bright.
- "Fundamentals of Computer Graphics" By Peter Shirley.
- "Adobe Photoshop and Textile Design" By Frederick L Chipkin.

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Neeru

**ORDINANCES
AND OUTLINES OF TESTS
SYLLABI AND COURSES OF READING**

FOR

BACHELOR OF VOCATION (FASHION TECHNOLOGY)

3rd Year

(5th AND 6th SEMESTER)

FOR

**2019-20 Examinations
Continued for session 2020-21**

SYLLABUS
B.VOC (Fashion Technology) Third Year(5th Semester)

2019-20 Examinations

Sr. No.	Title of Paper	External Assessment	Internal Assessment	Total Marks	Credits
1.	Fashion Marketing	74	26	100	3
2.	History of World Costume	74	26	100	4.5
3.	Personality and Clothing	74	26	100	3
4.	Apparel manufacturing Industry	74	26	100	3
5.	Drafting with Layout and Garment Constructions	100	0	100	4.5
6.	Computer aided Fashion Design – II	50	0	50	3
7.	Accessory Design and Construction	50	0	50	4.5
8.	Fashion Show	100	0	100	4.5
		596	104	700	30

B.VOC (Fashion Technology) Third Year (6th Semester)

2019-20 Examinations

Sr. No.	Title of Paper	External Assessment	Internal Assessment	Total Marks	Credits
1.	Industrial Training	200	200	400	18

6-month Industrial Training

Internal : 200

Extra Viva : 200

2. Student will organize their best work in a single design lodge.

a.) Port Folio

b.) Project Work

c.) Training (6th month)

3.) Student have to submit three certificates from the below activities for 12 credits General Studies. Each certificate has 4 credits.

a. NSS

b. NCC

c. RED CROSS

FASHION MARKETING (Theory)

B. Voc (FT)

SEM-V

Max. Marks :74

Allowed Time : 3hrs

Min. Pass Marks : 26

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 11 marks. Section C will consist of one compulsory question having 10 short-answer typed questions carrying 3marks each covering the entire syllabus uniformly.

Section-A

- Introduction to marketing: its nature, scope and importance in garments industry.
- Meaning of fashion market.
- Marketing planning and processes.
- Marketing terminology: Market, niche market, target marketing , vendor, supplier, Franchise, market research, sales, brand equity, labeling packaging branding etc.
- Fashion market and marketing environment.
- Factors affecting fashion industry.
- Marketing mix/ 4 Ps of Marketing.

Section-B

- Target market.
- Market plan, purpose and product feature.
- Advertising / advertising media / advertising effectiveness
- Market research.
- Marketing communication.
- Technological influence on fashion marketing.
- Online marketing

References:

1. "Fashion Marketing" By Essey Mike, Publisher Blackwell.
2. "Consumer Behavior in Fashion" By Soloman, Michale R, Publisher Pearson.
3. "Fashion Marketing and Merchandising" By Mary, Publisher Goodheart-Willcox
4. Principal's of marketing by Ashok Jain, V.K. Publications.
5. Marketing management by C.N. Sontakki, Kalyani Publications.

P.T.O.

History of World Costumes (Theory)

B. Voc (FT)

SEM-V

Max. Marks :74

Allowed Time : 3hrs

Min. Pass Marks : 26

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 11 marks. Section C will consist of one compulsory question having 10 short-answer typed questions carrying 3marks each covering the entire syllabus uniformly.

Section-A

Costumes of the Ancient World (300 B.C.-300A.D.)

Mesopotamia, Egypt, Greece & Rome

Costumes of the Middle Ages (300 A.D.-1500 A.D.)

Byzantine

English Costumes:

English costumes during middle ages:

Early middle ages.

Late middle ages.

Renaissance in Italy

Mannerism — 16th century.

Baroque — 17th century to 18th century.

Rococo — mid-18th century.

Section-B

6. The French costume

Renaissance in France(1500 A D)

Renaissance in France(1600 A D)

Renaissance in France(1700 A D)

7. The French revolution and thereafter (1790 A.D.-1900 A.D.)

The Directoire and Empire period (1790 A.D.-1820 A.D.)

The Romantic period (1820 A.D.-1850 A.D.)

The Crinoline period (1850 A.D.-1869 A.D.)

The Bustle period (1870 A.D.-1900 A.D.)

8. Suggested Readings:

Tortora P.G. and Eubank K. (1995) Survey of Historic Costume, New York, Fairchild Publications.

Sara, P. Tomp and Srah H. Fashion Costume and Culture (vol 1) The Ancient World, Thomas Gale.

James, L. Costume and Fashion: A Concise History; Thames and Hudson)2nd edition) 2002.

Jack Cassin-scott; The illustrated encyclopaedia of costume and fashion (from 1600 to present);

Block Hampton Press; London.

Bronwyn C; Costume and Fashion: A complete History, 2003.

P.T.O.

PERSONALITY & CLOTHING (THEORY)

B. Voc (FT)

SEM-V

Max Marks: 74

Allowed Time: 3 Hrs.

Min Pass Marks: 26

INSTRUCTIONS FOR THE PAPER SETTER

- The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 11 marks. Section C will consist of one compulsory question having 10 short-answer typed questions carrying 3marks each covering the entire syllabus uniformly.

Section – A

- History and theories of clothing;
 - i. Origin Theory
 - ii. Modesty Theory
 - iii. Protection Theory
- Definition of Personality, Personality and Self Concept.
- Social & Psychological implications of clothing on the wearer : children, young, adults, elderly.
- Fashion Apparel – women's , men's, children's and teenagers - category and size ranges.
- Fashion Accessories- categories, market segments and trends in accessory industry.

Section – B

- Clothing physiology :- Sloppy, designer, Skimpy, Business, Flashy, Drab, Athletic, Goth, casual.
- Clothing according to personality – Dainty, Sturdy, Dramatic, Demure, Dignified, Vivacious
- Effective use of elements and principles of design in clothing: textures, colours, form, shape, scale, balance, lines & space.
- Application of the principle & design to the basic figure type :-
 - i. Short and Thin
 - ii. Short & Stout
 - iii. Tall & thin
 - iv. Tall & Stout

Books Recommended:

Essential Reading:

1. Mary Shaw Ryan, Clothing; a study in human behavior, 1966, Holt, Rinehart and Winston (New York)
2. J. C. Flugel, Psychology of Clothes, June 1966, Intl Universities Pr Inc .
3. Marilyn J. Horn ,The Second Skin: An Interdisciplinary Study of Clothing, March 1981, Houghton Mifflin School

Further Reading:

4. Fred Davis,Fashion, Culture, and Identity ,1992,The University of Chicago Press Ltd.

Apparel Manufacturing Industry (Theory)
B. Voc (FT)
SEM-V

Max. Marks :74

Allowed Time : 3hrs

Min. Pass Marks : 26

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 11 marks. Section C will consist of one compulsory question having 10 short-answer typed questions carrying 3marks each covering the entire syllabus uniformly.

Section-A

Describe basic Apparel industry terms like retail, buyer, merchandise, merchant etc.
Organization of Apparel industry.
Structure and sectors of Apparel industry.
Work flow in Apparel industry through different departments.
Factors affecting the structure
Design department-forecasting, designing, collection planning.
Sampling department- Pattern making, grading and sampling technology, construction of sample garment.

Section-B

Marketing department- calendar, pricing, product planning, costumer, merchandising and sale.
Purchase department- supplies, prices, store keeping, inventory management.

Finance department- Information management, administration, costing, budgeting.
Dispatch department.
Garment Inspection using different methods.
Applying quality assurance programmers in fabric department, cutting, production and finishing department.

Suggested Readings:

1. "Apparel Production Terms and Process" By Janace Bubonia
2. "Apparel manufacturing-Sewn Product Analysis" By Ruth E. Glock and Grace Publisher Prentice.
3. "Guide to Apparel Manufacturing" By Peyton B, Hudson, Publisher Blackwell.
4. "Fashion Concept to Consumer" By Gini Stephens Frings, Publisher Pearson.

Drafting With Layout & Garment Construction (Practical)

B. Voc. (FT)

SEM-V

Max. Marks: 100
Passing Marks: 35

Time Allowed: 3 Hrs

Section- A

Drafting and Layout

- Bodice Block – front, back, sleeve.
- Shirt of Men's/Woman's
- Trouser of Men's/Woman's
- Jump Suit
- Skirt Top
- Designer Kurta
- Partywear Frock

Section-B

Garment Construction:

- Shirt of Men's/Woman's
- Trouser of Men's/Woman's
- Jump Suit
- Skirt Top
- Gown/Lengha Choli
- Designer Kurta

References:

1. "Metric Pattern Cutting for Women's Wear" By Winfred, Aldrich.
2. "Metric Pattern Cutting for Children Wear" By Winfred, Aldrich.
3. "Metric Pattern Cutting for Men's Wear" By Winfred, Aldrich.

Computer Aided Fashion Design-II (Practical)
B. Voc. (FT)
SEM-V

Time Allowed: 3 Hrs

Maximum Marks: 50
Passing Marks: 14

- Illustrating fashion model figures in front profiles and movement.
- Draping the fashion figure in different silhouette.
- Drape garments like skirt, shirt, gown, denim etc.
- Fashion details like plackets, collars, cuffs and buttons.
- Various illustration tools of Corel draw and Photoshop.
- Design a logo and create a brochure for your own label.
- Draw 3 profiles of female flesh figures (front, side and $\frac{3}{4}$ th).
- Show different silhouette in the garment
- Stitch lines.
- Trims.
- Make collage and swatch board.
- Drape different type of garments.
- Design a mood/story board according to the selected theme (both paper and computer assignment)

References:

- According to the software manuals.

Accessory Design and Construction (Practical)
B. Voc. (FT)
SEM-V

Time Allowed: 3 Hrs

Maximum Marks: 50
Passing Marks: 14

- Fashion accessories- its types [bags, hats/ millinery, gloves, shoes, belts, neckties, scarves, jewelry.
- Design and construct a jewelry by taking any inspiration.
- Design and renovate a hand bag according to a particular client.
- Design and construct a scarf.
- Design and construct a head gear.

References:

1. Fashion Accessories, John Peacock
2. Hats Status styles and Glamour, Colin Mc. Dowell
3. Fashion source Technical Design, Progeone
4. Moda Fashion, Gri Baudo
5. Shoes Fashion and Fantasy, Colin Mc.Dowell
6. Encyclopedia of fashion accessories, Phyllis Torbora

Fashion Design Construction (Fashion Show) - Practical
B. Voc (FT)
SEM-V

Time Allowed: 3 Hrs

Maximum Marks: 100

Passing Marks: 35

- Designing & Construction of the garments according to theme for the **Fashion show**.

References:

1. “Dress Design: Draping and Flat Pattern Making”, M.S. Hillhouse, E.A. Manfield, Publisher Houghton Mifflin College Division.
2. “New Complete Guide to Sewing” By Reader Digest, Publisher Reader Digest New York.

B.VOC. (Fashion technology) 3rd year 6th Semester
B. Voc (FT)
SEM-VI

1) 6-month Industrial Training

Internal : 200

Extra Viva : 200

2) Student will organize their best work in a single design lodge.

- a) Port Folio
- b) Project Work
- c) Training (6th month)

3) Student have to submit three certificates from the below activities for 12 credits General Studies. Each certificate has 4 credits.

- a. NSS
- b. NCC
- c. RED CROSS

**OUTLINES OF TESTS
SYLLABUS & COURSES OF READING
For
Bachelor of Vocation (Garment Designing)**

For

Session- 2023-24, 2024-25, 2025-26



**Punjabi University
Patiala**

Jaspreet Kaur
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SYLLABUS
B.Voc GARMENT DESIGNING
Programme Code- BVGD3PUP
PART-I (Semester-1st)
Session 2023-24, 2024-25, 2025-26

Semester I							
Programme	Paper Code	Name of the Paper	Generic/ Skill Component	Internal	External	Total	Credit
B.Voc Garment Designing (Course Code- BVGDB3PUP Sem-I)	BVGDB111T	Punjabi Compulsory /Punjabi Mudla Gyan	Generic	30	70	100	4
	BVGDB112T	Personality Development & Communication skills	Generic	30	70	100	4
	BVGDB113T	Introduction to computer Basics	Generic	30	70	100	4
	BVGDB114T	Basics of Garment Construction	Skill	30	70	100	4
	BVGDB115T	Fabric Science- I	Skill	30	70	100	4
	BVGDB116L	Fashion Sketching-1	Skill	00	100	100	5
	BVGDB117L	Basics of Garment Construction	Skill	00	100	100	5
Total				150	550	700	30

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BVGDB111T

Punjabi Compulsory/ Punjabi Mudla Gyan (Theory)

SEM-I

Max. Marks: 70

Min. Pass Marks: 35%

Allowed Time: 3hrs

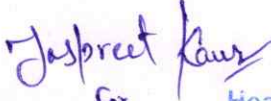
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For Punjabi compulsory


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Academic Session 2023-24→ Faculty of Language→ Punjabi→ under Graduate courses→
B.Voc, B.M.M, B.T.T, B.H.M, PAPER- Punjabi Com. Part I (Sem 1 & 2). Pdf.

For Punjabi (Mudla Gyan)

Punjabiuniversity.ac.in syllabus→ download syllabus→ click here to download syllabus→
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BVGDB112T

PERSONALITY DEVELOPMENT & COMMUNICATION SKILLS (THEORY)

SEM-I

Max. Marks: 70

Min. Pass Marks: 35%

Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

SECTION-A

- **Communication**
Meaning and Objective
Importance and Process.
Channels of Communication and Barriers to Communication
Importance of Feedback
- **Interview**
Meaning
Preparing, Appearing, Conducting
- **Report Writing**
Meaning and Qualities
Essentials for Report writing
Types of Report
Format and Structures of formal Report writing
Essential parts of Report
- **Speeches & Presentation**
Meaning
Difference between Presentation and Speech
How to find material
Process and Techniques
Factors affecting Presentation
- **Group Discussion**
- **Business Correspondence**

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SECTION-B

- **Personality and Personality Development**

Introduction

Personality Development

Dynamics of Personality

Personality Analysis through body language and Individual habits

- **Self Development skills**

Self esteem and Self-confidence

Thinking and Problems Solving Skills

Stress Management

Goal-Setting

- **Interpersonal Skills**

Hard Skills and Soft skills

Leadership

Social Empathy

- **Emotional Stability**

- **Mental Blocks**

- **Manners and Art of living**

Suggested Books:

- Communication skills and Personality Development by T. Singh, New Academic Publishing Co.
- R.Singh, Vandana .The Written Word ,New Delhi: Oxford ,2006
- Sehgal, M.K., Khetarpal, Vandana. Business Communication. New Delhi. Excel Books,2007
- Dutt. A Course in Communication Skills. Bangalore. Cambridge University Press,2008
- Jagota, Subhash. Succeeding through Communication .New Delhi. Excel Books,2007

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INTRODUCTION TO COMPUTER BASICS (THEORY)

SEM-I

Max. Marks: 70

Min. Pass Marks: 35%
Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

SECTION- A

- Basics of computer. (Definition, working, functions, generations etc.)
- Potential and limitations of Computer.
- Introduction to operating system: Windows fundamentals.
- Basic components of Computers, CPU, Control Unit, ALU, Block Diagram of Computer.

SECTION- B

- Introduction to Hardware and Software Components., CPU, Primary and Secondary Storage, Input & Output devices, Computer peripherals, VDU, Keyboard, Mouse, Printer.
- Basic operations and tools of word, power point and excel.
- Introduction to Network, type of networks, www, e-mail. Basics of Internet.
- Introduction to Corel Draw. Basic Tools of Corel Draw. Use of colour
- Features of Corel Draw.
- Advantages of using Corel Draw.

Suggested Books:

- Peter, Norton. Introduction to Computers. 6th Edition. New Delhi. McGraw-Hill Education, 2012
- Siaw Afriyie, Bright. Introduction to Computer Fundaments. New Delhi. McGraw-Hill Education, 2007
- Information Technology

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BVGDB114T

BASICS OF GARMENT CONSTRUCTION (THEORY)
SEM-I

Max. Marks: 70

Min. Pass Marks: 35%
Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

Section-A

A study of Anthropometric / body measurements

- Equipments required
- Different types of taking measurements for clothing construction
- Care to be taken while taking measurements.

Tools and equipments used in clothing construction

- Measuring Equipments
- Cutting Equipments
- Sewing Equipments
- Finishing Equipment

Introduction of sewing Machines

- History of sewing machine
- Parts and Functions, machines attachments
- Care and Maintenance of sewing machine
- Sewing machine problems and other solutions
- Industrial Sewing Machines

Principle of Sewing

- Selection of needle, thread and stitches according to fabric

Section- B

Fabric Preparation for cutting-

- Importance of grain in cutting and construction
- Steps in preparing the fabric for cutting

Different widths of fabric

Supporting Fabrics: - lining, interlining, underlining, facing, interfacing

Garment detail: - Plackets, Pockets, Yokes, Fasteners, Trimmings, Pressing

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Process of Fullness

- Reducing fullness of garment:-darts, tucks.
- Adding fullness to garment:-Pleats, frills, gather, ruffles.

Safety and Security in tailoring workplace

Terminology: Tailors curve, French curve, Crewel needle, Dummy, chenille needle, Tapestry needle, Trouser stick, Tracing wheel, Grain, Binding, Selvedge, Stay stitching, Faching, Girth, Seat, Seam ripper, Across back, Across front, Shuttle, Binder, Quilter, Bobbin, French seam, Run and fell seam, Pleats, Tucks, Gathers, Corners, Casings, facing, Seam allowances, Notches, Italian, Inlay, Laying.

Suggested Books:

- Dr. Rajwinder k. Randhawa, clothing, textiles and their care. published: Pardeep
- Dr. Neelam Grewal, Text Book of Home Science (Clothing and Textiles) AP Publishers
- Varinder pal Singh, clothing, textiles and their care. published: Pardeep
- Ms. CHANDANA RAJPUT. Garment construction and pattern making. Published by:- AP PUBLISHERS
- Sewing Technology Krishna Brothers, Jalandher

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BVGDB115T

FABRIC SCIENCE-I (THEORY)
SEM-I

Max. Marks: 70

Min. Pass Marks: 35%
Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

SECTION – A

- Basic Fiber Properties
- Classification of Fibers
- Natural Fiber-Cotton, Silk, linen, Wool(Sources, Properties and Use)
- Manmade Fibers- Rayon, Polyester, Nylon(Sources, Properties and Use)

SECTION– B

- Yarn Classification
- Types of Yarns- single Yarns, Novelty Yarns, Textured Yarns
- Yarn Spinning, (staple yarns-conventional yarns, open and spinning, friction spinning, self spinning twist spinning, twist less spinning).
- Filament yarns- wet, dry and melt spinning.
- Yarn Numbering system

Suggested Books:-

- Stephens Frings, Gini .Fashion Concept to consumer .9th Edition. New York .Prentice Hall,2007
- Mike, Essay. Fashion Marketing ,UK.Wiley,2010
- Stone, Elaine. Dynamics of Fashion .3rd Edition. New York. Bloomsbury Academic, 2008s
- Bhatnagar, Parul. Elementary Textiles. Agra. Abishek Publications ,2002
- Potter, Corbman, Fibers to Fabrics. New Delhi ,Tata MacGraw Hill,1967
- Vilensky. Textile Science.Delhi,CBS,1983
- Varinder Pal Singh, Kanwar. Introduction to Textile. Ludhiana, Kalyani Publications,200

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FASHION SKETCHING-I (PRACTICAL)
SEM-I

Min Pass Marks: 35

Max Marks: 100

- Make geometric figures 8-1/2, 10 and 12 heads, front back and 3/4 profiles and fleshing on geometric figures.
- Face analysis.
- Draw features eyes, nose, ear, lips, face, hands, arms, feet, legs and hair style.
- Sketching of stick figures in different poses.
- Detail in study in pencil and color with light and shade of different type of folds, gathers and shape of Fabrics in dresses.
- Drawing of jewellery.
- Depicting various silhouettes on fashion figures.

Suggested Books:

- Dawber, Martin. Book of Fashion Illustration .UK.Batsford,2007
- John, Patrick. Fashion Design Illustration .UK.Batsford,1996
- Allen, Anny, Seaman. Fashion Drawing The Basic Principals .UK.Batsford,1993
- Fashion drawing – magazine of Thailand
- All volumes and kiddys

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BVGDB117L

BASICS OF GARMENT CONSTRUCTION (PRACTICAL) SEM I

Max Marks: 100

Min Pass Marks: 35


Basics Samples:


- Stitching Samples Straight, Circular, Square, Spiral curvilinear & chevours
- Seams and seam finishes- plain lap, run and fell counter hem piped, pinking, over locking & turned & stitched.
- Basting Straight (running and tacking) Diagonal, tailor's tack
- Hemming Vertical (Invisible), lips Stitching, blind Stitching
- Facings & binding round, square, 'V' Shape and shaped necklines.
- Plackets and Fasteners- Two piece (kurta placket and blouse placket), one piece extended bodice, zipper placket.
- Fullness treatment gathers into a band, smoking tucks, darts pleats.
- Application of different types of trimmings- laces, piping, bindings, appliqué.
- Different types of Necklines.


NOTE- Students will be make three articles using above techniques.

Suggested Books:

- Indian Craft by saroj D.N Publisher Vikas
- Technology of Indian Embroidery by Mavel a Publisher Bots ford.
- Crafine art of embroidery " By Snoop Brbare Publisher Numbity
- Embroidery Designs "By Nirmala C Mistry Publications Navneet".


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Semester II

Programme	Paper Code	Name of the Paper	Generic/ Skill Component	Internal	External	Total	Credit
B.Voc Garment Designing (Course Code- BVGDB3PUP Sem-II)	BVGDB121T	Punjabi Compulsory/ Mudla Gyan	Generic	30	70	100	4
	BVGDB122T	Conceptual studies of fashion	Skill	30	70	100	4
	BVGDB123T	Fundamental of Pattern Making	Skill	30	70	100	4
	BVGDB124T	Design Basis	Generic	30	70	100	4
	BVGDB125L	Basics of Computer	Generic	00	100	100	4
	BVGDB126L	Fundamental of Pattern Making & Construction Skills	Skill	00	100	100	5
	BVGDB127L	Fashion Sketching-II	Skill	00	100	100	5
	*BVGDB128T	Drugs Abuse: Problem, Management & Prevention	Generic	compulsory qualifying paper as per for university guidelines			
Total				120	580	700	30

***BVGDB128T Drug Abuse: Problem, management & Prevention (Theory) are compulsory qualifying paper as per for university guidelines, the marks of this paper are not conducted for the total marks for the degree

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Punjabi Compulsory/ Punjabi Mudla Gyan (Theory)

SEM-II

Max. Marks: 70

Min. Pass Marks: 35%
Allowed Time: 3hrs

To download the Syllabus goes to:


For Punjabi compulsory

Punjabiuniversity.ac.in syllabus→ download syllabus→ click here to download syllabus→ Academic Session 2023-24→ Faculty of Language→ Punjabi→ under Graduate courses→ B.Voc, B.M.M, B.T.T, B.H.M, PAPER- Punjabi Com. Part I (Sem 1 & 2). Pdf.

For Punjabi (Mudla Gyan)

Punjabiuniversity.ac.in syllabus→ download syllabus→ click here to download syllabus→ Academic Session 2023-24→ Faculty of Language→ Punjabi→ under Graduate courses→ for under graduate courses common paper PBI. COMP. (MUDLA GYAN) Part -I (Sem 1 & 2) for regular candidates. Pdf


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CONCEPTUAL STUDIES OF FASHION (THEORY)

SEM-II

Max. Marks: 70

Min. Pass Marks: 35%
Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

SECTION – A

- Introduction to Fashion, Principle of Fashion, Fashion Psychology
- Fashion Cycle, Factors influencing Fashion
- Sources of inspiration for fashion designer-History, media, films, theatre.
- Factors affecting Fashion and Fashion forecast
- Theories of Fashion adaption-Traditional Fashion Adoption(Trickle down Theory), Reverses Adoption (Bottom Up Theory), Mass Dissemination (Trickle across Theory)
- History and Theories of Clothing selection-(a)Origin of Clothing, (b) Modesty Theory, (c) Protection Theory
- Fashion Terminology – Fashion, Style, Fed, Classic, Trendies, High Fashion, Haute Couture, Designer, Mass Fashion, Display, Design, Accessories, Fashion Consultant, Fashion Cycle, Fashion Forecast, Fashion Show, Fashion Trendies, Vogue, Ready Tower

SECTION – B

- Clothing Psychology- role of clothing in physical, social, cultural scenario
- Human behavior and clothing, Clothing and gender differentiation
- Factor affecting the selection of clothes
- Clothes for different age groups-infants, adolescents, adults, clothes for the elderly
- Clothing needs for Physically challenge
- Personality and Self Concept

NOTE- An Assignment on National and International designer of 20th and 21st century – Their Profile collection and contribution to fashion work.

Suggested Books:-

- Stephens Frings, Gini Fashion Concept to consumer .9th Edition. New York .Prentice Hall,2007
- Mike, Essay. Fashion Marketing ,UK.Wiley,2010 Stone, Elaine. Dynamics of Fashion .3rd Edition. New York. Bloomsbury Academic, 2008
- Psychology of clothing by J.G, Flugel
- Concepts of Clothing by Marry, Rose & Cranz

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BVGDB123T

FUNDAMENTAL OF PATTERN MAKING (THEORY)
SEM-II

Max. Marks: 70

Min. Pass Marks: 35%
Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

Unit – A

- Introduction of Pattern Making and Tools used in Pattern making.
- Importance of Pattern\ Drafting: sequence of Pattern\drafting, consideration while Pattern\drafting
- Precautions/ Points to kept in mind while making Patterns. Benefits of paper Pattern Making
- Method of Pattern Development –Slash and spread and pivot methods
- Altering patterns – lengthwise and shortening pattern, bust alterations, waist and hip alterations, shoulder back and sleeve alteration
- Grading- terminology, types of grading, principle of grading

Unit – B

- Layout/Fabric estimation and its importance.
- Fitting: good fitting principles, fitting problems and their solution.
- Draping introduction, equipments required, draping procedure, marking, trueing, Advantages and disadvantage of draping.
- Difference between drafting, pattern making and draping.
- Commercial paper pattern
- Basic Terminology:- paper pattern, templates, seamless pattern, block, Grain Line, corollary, working pattern, production pattern, design specification sheet, cost sheet, land marks, working pattern, grading, Bust point, balance, notches, draping, ease, dart, truing and binding, pattern plot pivotal point, bias cut

Suggested Books:-

- Allyne, Bane. Flat Pattern Design. USA, Tata Mcgraw Hill,2009
- Martin M.Shoben. Pattern cutting making up. New Delhi, CBS Publishers, 1996
- PamilaC. Ruction Stinger .Pattern drafting for dress making. Delhi, Augustan Publisshers,1995
- Garment Construction And Pattern Making (Fashion Designing), by Chandana Rajput, AP Publishers, Jalandhar.

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DESIGN BASICS (THEORY)

SEM-II

Max. Marks: 70

Min. Pass Marks: 35%
Allowed Time: 3hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 12 marks. Section C will consist of one compulsory question having 11 short-answer typed questions carrying 2 marks each covering the entire syllabus uniformly.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B of the question paper and the entire section C.

SECTION-A

Design definition – Meaning, Importance & Designing

Importance & Role of every element in design

- Line
- Shape
- Texture
- Value
- Color

Classification of Motifs- Study of different motifs of textile design

- Natural
- Decorative
- Geometric
- Abstract

Principles of design – importance and role in designing

- Proportion
- Repetition
- Balance
- Variety
- Unity
- Gradation
- Emphasis
- Dominance & Sub dominance

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SECTION:-B

1) Definition of color

Classification of colors:

- Dimensions of color- Hue, Intensity, Value
- Aspects of color- warm, Cool, Hot, Cold, Dark, Pale, Bright

2) Role of color in designing

- Color Wheel
- Primary Colors
- Secondary colors
- Tertiary colors
- Color Schemes/ Harmonies

3) Understanding of texture effects

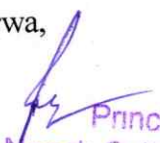
4) Define collage: Types of collage

5) Texture – types of Texture, effects, using textures in design

Suggested Books:

- Color Harmony a Guide to creative color combinations-Bride M. Whelan
- Designer guide to color-Volume - 1 - 5 -James Stockton
- A Basic Study-Bhagwat Gajanan
- Basic Design & Anthropometry-S.V. Bapat
- Colour Harmony -A Guide to creative colour combinations by Hideaki Ghijirwa,


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BVGDB125L

**BASICS OF COMPUTERS-(PRACTICAL)
SEM-II**

Max Marks: 100

Min Pass Marks: 35%

Course Objectives and contents


Upon completion of this course students will be able to:

- Demonstrate an advanced knowledge of the Word Processing package, MS Office and knowledge of how to design & create effective and structure documents like technical report, letter, brochures, etc.
- Demonstrate the skills in the appropriate use of various features of the spread sheet package MS Excel and also to create useful spreadsheet applications like tabulated statements, balance sheets, statistical charts, business statements, etc.
- Demonstrate the skills in making an effective presentation with audio and video effects.
- Draw graphical pictures, flow charts, block diagrams etc., using the drawing tools available in MS Word or MS Power Point and incorporate them into documents and presentations.

Suggested Books:

- Microsoft Office Word by Torben Lage Frandsen
- Word 2010 Introduction by Stephen


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BVGDB126L

**FUNDAMENTALS OF PATTERN MAKING AND CONSTRUCTION SKILLS
(PRACTICAL)
SEM II**

Max Marks: 100

Min Pass Marks: 35%

Study of body measurements and Standardization size Chart for Children.

Drafting and Pattern:-

- Creation of Bodice block and a sleeve block for a child.
- **Sleeve:-** plain sleeve, Puff Sleeve, Cap Sleeve, Bell Sleeve, Umbrella Sleeve, Flared Sleeve, Tulip, Hankey, Magyar, Kimono.
- **Collars:-** peter pan, two-piece peter pan, bishop, cap, Chinese, flat tennis.

Drafting and Construction of the Following:-

- Panty, Bloomer
- Romper
- Sundress
- Night Suit
- Child's Frock(A-Line Frock, Gather Frock, Party wear frock)
- Suit with salwar

Suggested books:

- Drafting & Draping by Manmeet Sodhia Publication Kalyani
- Basic Process and Clothing Construction by Shree Doongaji and Roshani Desh Pande Publisher Unique Education Books. Raj Parkashan. New Delhi.
- Garment Construction Skills"By Mullick Premalata.
- Cream Panelope. The Computer Book of Sewing- APractical Step by Step Guide to Sewing Technique.

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BVGDB127L

FASHION SKETCHING-II (PRACTICAL)
SEM-II

Max Marks: 100

Min Pass Marks: 35%

Work on different variations of basic garments.

- Skirts
- Trousers
- Gowns
- Dresses
- Shirt
- Jacket
- Halter dresses
- Pants

Study of colours

- Colour Wheel- Primary, Secondary, tertiary
- Make a design of all colour schemes.
- Different Textures- thread pulling, thread crumple, Thread rolling, Blade Effects, jute, thumb, comb, ink blow.

Suggested Books:

- Abbing, Bina., Fashion Sketchbook, Parson School of Design & Fashion Institutes of Technology, Fairchild Publication, New York 2004.
- Kathryn, Mc Kelvey & Munslow, Janine. Illustrating Fashion, Blackwell Publishing, London 2005.
- Ireland, Patrick. John., Introduction to Fashion Design, B.T. Batsford Ltd, London 2001
- Color Harmony a Guide to creative color combinations-Bride M. Whelan
- Designer guide to color-Volume - 1 - 5 -James Stockton

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BVGDB128T

Drug Abuse: Problem, Management & Prevention

Syllabus as per university guidelines

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SYLLABUS

BACHELOR OF VOCATION
GARMENT DESIGNING
OUTLINE OF PAPER AND TESTS
FOR
B.VOC GARMENT DESIGNING PART-II
(Semester-3rd)
Session 2021-22, 2022-23, 2023-24

Semester III							
Sr. no	Title	Generic/ Skill Component	Theory/ Practical	Internal	External	Total	Credit
B.VGD-131	Introduction To economics	Generic	Theory	26	74	100	6
B.VGD-132	Fabric Science II	Skill	Theory	26	74	100	4
B.VGD-133	Indian traditional textiles	Skill	Theory	26	74	100	4
B.VGD-134	E -Commerce, E- Marketing and web design	Generic	Theory	26	74	100	6
B.VGD-135	Training (one month)	Skill	Practical	0	100	100	3
B.VGD-136	Needle Craft	Skills	Practical	0	100	100	4
B.VGD-137	Draping Methods	Skill	Practical	0	100	100	3
B.VGD-138	Environment and Road safety Awareness	Generic	Theory	40	60	100	*** Qualifying Exam
Total				104	596	700	30

*** B.VGD-238) Environment and Road safety Awareness – Is a Compulsory Qualifying Paper as for university guidelines, the marks for this paper are not counted for the total marks for the degree.

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**INTRODUCTION TO ECONOMICS
(THEORY)
SEM-III**

Max. Marks: 74

Allowed Time : 3Hrs

Min Marks: 26

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 15 short-answer type questions carrying 2 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

SECTION-A

Money

- Meaning and importance of Money - types of money.
- Functions of money.
- Inflation and Deflation

Bank

- Commercial Banks and Central Bank.
- Functions of Commercial Banks
- Credit, its Need and its effects

SECTION-B

Taxation

- Meaning and type of taxes.
- Principles of Taxation.
- Direct and Indirect taxation.


Types of Economies

- Capitalist economy (general features).
- Socialist economy (general features).
- Mixed economy (general features).
- Under-developed economy (general features).
- The Nature of Indian Economy.

Suggested Books:

- Dewett, K.K.L Modern Economics: Theory, Premier Publishing House, Jullunder, 1965.
- Cain Cross: Introduction to Economics, Butter worked London, Latest Ed.
- Sundaram K.P.M.: Text Books of Economics Theory Rattan Prakashan Mandi Agra, Latest Ed.
- Aggarwal, A.N.: Introduction to Economics Principles, Kitab Mahal, Allahabad, Latest Ed.




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B.VGD-132

FABRIC SCIENCE-II (Theory)

SEM- III

Max. Marks: 74

Allowed Time: 3Hrs

Min Marks: 26

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 15 short-answer type questions carrying 2 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section-A

Techniques of fabric construction:

- Weaving
- Basic loom
- Classification of weaves.
- Plain weave – Rib weave, Basket, Twill, Satin, Sateen
- Decorative weave – Pile, Double cloth weave, Leno, Dobby and Jacquard weave.

Introduction and classification of knitting:

- Weft Knitting-Plain Knit, Purl knit, Rib Knit.
- Warp Knitting-Tricot Knit, Raschel Knit, Ketten Rachel Knit, Milanese Knit, Crochet, Jacquard Knit.

Comparison of Knitting with Weaving.

Non-Woven Fabrics:

- Felting
- Bonding

SECTION -B

Classification of Finishing Process :-

- Stabilizing Finishes-Tentering, Sanforizing, Mercerization, Ammoniating.
- Textural Finishes-Calendering, Beetling, Glazing, Sizing or Stiffening , Weighting, Napping Moireing, Embossing
- Functional Finish-Crease-resistant Finish, Water-proof and water-repellent finish

Classification of Dyeing-

- Natural and Synthetic dyes
- Industrial Dyeing and Household Dyeing

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Methods of Printing techniques:-

- Direct Printing, Resist Printing, Discharge Printing
- Machine Printing-Roller Printing, Screen printing, Transfer printing, Pigment Printing , Flocking
- Hand Printing-Block Printing, Stencil Printing, Screen Printing

Suggested Books:-

- Pradeep's Clothing, Textiles and their Care, Dr. Rajwinder K. Randhawa
- Vilensky. Textile Science. Delhi, CBS, 1983
- Textile Fibre to Fabric McGRAW-HILL international edition

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INDIAN TRADITIONAL TEXTILES (Theory)**SEM III****Max. Marks: 74****Min. Marks: 26****Times Allowed: 3 Hrs.****Instructions for the paper setter**

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 15 short-answer type questions carrying 2 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section-A**Traditional textiles of the Northern region of India**

- Jammu & Kashmir – Kashmir shawls
- Punjab – Phulkari and bagh
- Himachal Pradesh – Chambarumal
- Uttar Pradesh – Chikankari of Lucknow
- Brocades of Varanasi

Traditional textiles of the Western region of India

Rajasthan- professional and domestic embroideries, beadwork, block printing, screen printing, ajarakh, mata-ni-pachedi, roghan work, bandhani, mashru, patola, brocade weaving, and Surat's zari industry, Leheria, Pabuji par, and ply-split camel girths.

Section- B**Traditional textiles of the Eastern and Southern region of India Eastern Region: – Eastern region:**

- Bengal and Bihar – Dacca muslins, Jamdani, Baluchar Butedar, Kantha work and sujani work.
- Odisha – Ikat and pipli work.

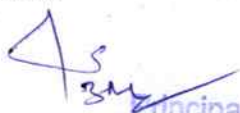
Southern Region:

- **Andhra Pradesh** – ikats of Pochampalli, teliarumal, and kalamkari Tamil Nadu – Kanchipuram silks
- **Karnataka** – Kasuti embroidery, ilkalsarees, and banjara embroidery Kerala and Goa – traditional textiles
- **Maharashtra** – paithani saris, himru and pitambar
- **Madhya Pradesh** – chanderi and maheswari saris

Suggested Books:

- Gillow.J & Barnard. N- (2014)- *Indian Textiles*- Om Books International- New Delhi
- Lynton- (2002)- *The Sari*- Thames and Hudson Ltd, London
- National Institute of Fashion Technology- (2015)- *Textiles and crafts of india- Arunachal Pradesh, Assam, Manipur*- Prakash Books, New Delhi
- Sahay. S- (1998)- *Indian Costume, Coiffure and Ornament*, Cornet Books
- Mohpatra R.P- (2003)- *Fashion Styles of Ancient India*- BR Publishing Corporation
- Ghurye G.S- (2008)- *Indian Costume*- Popular Prakashan
- Technology of Indian Embroidery " By Marel A. Publisher Bats ford.




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E-Commerce, E-Marketing and Web Design (Theory)

SEM-III

Max. Marks: 74

Min. Marks: 26

Times Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 15 short-answer type questions carrying 2 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section-A

UNDERSTANDING THE INTERNET: History of the Internet, How the Internet works, How people access the Internet, www, email, browsers, etc. Internet Statistics and trends.

DIGITAL MARKETING STRATEGY: Key definitions, Building blocks of marketing strategy, crafting a digital marketing strategy, Case Study: Vets Now

WEBSITE DESIGN AND DEVELOPMENT: Key definitions, how it works, User experience design, Website Development.

SEARCH ENGINE OPTIMISATION: Key definitions, how it works, SEO Tools, Case Study: Lloyds Pharmacy

Section-B

ECOMMERCE: Key definitions, How it works? Types of E-commerce, Case Study: Pixie Faire.

SOCIAL MEDIA PLATFORMS: Key definitions, Main platforms, Social Media Analytics, Case Study: Harley Davidson

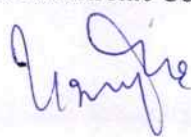
SOCIAL MEDIA MARKETING: Key definitions, Social Media Strategy, Community Management, Crisis Management

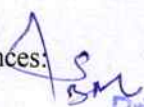
EMAIL MARKETING: Key definitions, How it works? Email planning & design, Email regulation

VIDEO MARKETING: Key definitions, How it works, Video Production Process, Video Optimization

SUGGESTED BOOKS:

- Computer network and internets-D.E. Comer- Pearson Education.
- HTML-E.Stephen Mack and Janam Platt-BPB Publications
- The Complete Reference-HTML-Powell Thomas-Tata Macgraw Hill
- Complete Reference of ASP. Net-Black Book.
- Ravi Kalakota, Andrew B. Whinston: Frontiers of Electronic Commerce, Addison Wesley. References:




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- EfraimTurbon, Jae Le, David King, Chung: Electronic Commerce- A managerial perspective, Prentice-Hall International.
- Gary P. Schneider, James T. Perry: Electronic Commerce

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Amr

B.VGD-135

**TRAINING (ONE MONTH)
(PRACTICAL)**

SEM III

Max Marks: 100

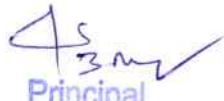
Min Pass Marks: 35

Objectives-

- To impart knowledge on working of apparel industry
- To gain practical knowledge on different departments apparel industry
- To gain knowledge of self employed
- In depth of knowledge of textiles and handicrafts
- To learn research and documentation of various Indian crafts by visiting and meeting the craftman and artisans personally.

Industrial Training Report/ Craft Documentation/Fashion house

- Training in garment /textile industry/ export or import house / craft cluster/ Fashion house/ Boutique
- Duration 4-6 weeks.
- Submission of the training report


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B.VGD-136

NEEDLE CRAFT- (PRACTICAL)
SEM- III

Max Marks: 100

Min Pass Marks: 35

Introduction to Needle craft tools and equipments used in needle craft-

Stem, back, running, chain, lazy daisy, blanket, buttonhole stitch, spider's web, fly, French knot, bullion knots, fish bone, Romanian, satin, long & short stitch chevron and herringbone

Introduction to Indian traditional embroidery stitches-

Phulkari, Kantha, Chikankari, Sindhi, Kasida, kasuti.

Surface Ornamentation

Appliqué Work

Mirror Work

Patch work

Ribbon Work

Smocking

Quilting

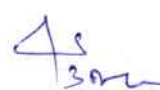
Shirring

Crochet- Single, Double, Treble

Knitting-Basic, Purl, Rib, Stocking

Suggested Books:

- "Indian Costumes" By Gurey G. S, Publisher Popular Book.
- "Ancient Indian Costumes" By Roshan Alkazi.
- "Periods of Centralization and Development of Dressing in India" By Wlex A.


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B.VGD-137

DRAPING METHODS (PRACTICAL)
SEM-III

Max Marks: 100

Min Pass Marks: 35

Introduction to draping

- Tools & Equipments used in Draping
- Draping Dresses:-The Straight Shift, Princesses Dress Basic draping Methods-Bodice Front and Back, Skirt Front and Back
- Draping, Collars, Cowls, Yokes, Fullness
- Development of Choli converting the same into garment Draping of designer Choli and evening gown.

Grading Techniques- Introduction to grading and its importance

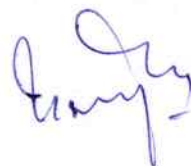
- Introduction to different methods of grading in Front Bodice, Back Bodice, Sleeve Block.

Dart Manipulation: Shifting dart to different positions- Slash and Spread Method, Pivotal Technique

Suggested Books:

- Pattern making for fashion design' by Helen Joseph Armstrong
- Draping for fashion design' By Jaffe Hilde and Relis Nuire
- Dress design: draping and flat pattern making', M.S Hill house


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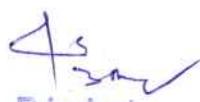


B.VGD-138

All UG Courses - II Year (SEM-III)

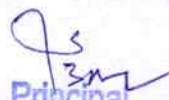
Environmental and Road Safety Awareness

Syllabus as per University guidelines


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SEMESTER IV							
Sr. no	Title	Generic/ Skill Component	Theory/ Practical	Internal	External	Total	Credit
B.VGD-141	Care and maintenance of garments	Generic	Theory	26	74	100	6
B.VGD-142	Garment Production Management	Skill	Theory	26	74	100	4
B.VGD-143	Fashion marketing and Merchandising	Skill	Theory	26	74	100	3
B.VGD-144	History of Indian costumes	Skill	Theory	26	74	100	4
B.VGD-145	Computer Aided Fashion Design	Generic	Practical	0	100	100	6
B.VGD-146	Fashion Presentation	Skill	Practical	0	100	100	4
B.VGD-147	Pattern Making, Garment construction (Women's Apparel)	Skill	Practical	0	100	100	3
	Total			104	596	700	30
Qualification pack - SEWING TECHNOLOGY, NSQF LEVEL- 6	Reference NCO 2015: 3122.3500 Evaluation shall be done by Apparel made-ups and Home furnishing Sector Skill Counsel					Result will be communicated to the university to the University by college	18


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CARE AND MAINTENANCE OF GARMENTS (THEORY)

SEM IV

Max. Marks: 74

Min. Marks: 26

Time Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 15 short-answer type questions carrying 2 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

SECTION- A

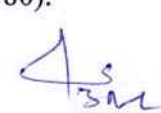
- **Laundry equipment for storage, for steeping and Washing** – Wash board, suction washer, wash boiler, washing machine. Drying equipments – outdoor and indoor types. Irons and ironing board – types of iron (box, flat, automatic, steam iron). Ironing board – different types.
- **Soaps and detergent**-Composition, types, qualities, manufacturing and cleaning action of soap and detergents.
- **Laundering of different fabrics** – cotton, wool, silk and synthetic garment.
- **Selection and care of Linen**: selection and storage of household linen.
- **Dry-cleaning** - definition and its types.

SECTION-B

- **Stain Removal**: Food stains, lead pencil, lipstick, mildew, nose drops, paint, perfume, perspiration/ mildew, tar, turmeric and kum- kum, general rules & ways of stain removal.
- **Care labels** – washing, bleaching, Drying, ironing and different placements of label in garments.
- **Starches and Blues**- types and uses
- **Bleaches**– Types and application.

Suggested Books:

- Textiles fabrics and their Selection – Wingate I B, Allied publishers Ltd, Chennai.
- Fundamentals of Textiles and their Care- Susheela Dantyagi, Orient Longmann Ltd (1980).
- Family Clothing – Tate of Glession, John Wiley & Sons Inc, Illinois.


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B.VGD-142

GARMENT PRODUCTION MANAGEMENT (THEORY)
SEM- IV

Max. Marks: 74

Min. Marks: 26

Time Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 15 short-answer type questions carrying 2 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

SECTION-A

Organization of Apparel Industry

- Structure and Sector of Industry
- Factors affecting the structure

Principles of Management

- Planning types and strategies
- Project Planning and Control

Production Section

- Production system
- Production planning
- Plant layout

Testing of Fabric and Garments

- Fabric Inspection
- Garment Inspection

SECTION – B

Finishing of garments

- Pressing
- Trimming
- Packing




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Dispatch Department

- Meaning and Functions

Industrial Engineering concepts in improving apparel productivity in brief.

- Work study and standard time control.
- Balancing

Quality Control in Production –

- Introduction Importance
- Tools for quality control.

Suggested Books:

- Garment Technology for Fashion Designers by Gerrycooklin
- Introduction of clothing Production Management by A. J.Chutler
- Quality control in Apparel Industry by P.V. Mehta
- Guide to Apparel Manufacturing by Peyton B, Hudson, Publisher Blackwell.


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B.VGD-143

FASHION MARKETING AND MERCHANDISING (THEORY)
SEM-IV

Max. Marks: 74

Min. Marks: 26

Time Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 15 short-answer type questions carrying 2 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

SECTION- A

Marketing – Introduction to Marketing, Definition, Fashion Marketing Concepts
Marketing Mix – Product, Price, Place, and Promotion

Marketing Research to study Consumer Demand:-Consumer behavior,
Determinants, Types, Buying motions

Distribution System- Sales Promotion, Sales Promotion Strategies, Publicity &
public relations, Good salesmanship

SECTION-B

Fashion Merchandising – Definition of merchandising and related terminologies
(CMT, converters, customer profile, GSM, lead time, mark up, mark down, range planning,
QC, sub contractor, vendor) merchandiser, specification sheet, execution of route card, role
of fashion buyer.

Sampling – types of samples

Brand and Fashion retailing – Brand definition, Brand Name, Brand Licensing, Trade Mark, Brand
Canvas. Types of brand, and Brand license, Store categories and Showrooms (retailing & non store
retailing)

Fashion Promotion –

Promotional Mix -Fashion Press, Types of Fashion Shows, Window display, Visual
Merchandising. Fashion Advertising, Sales Promotion, and Fashion Publicity.
merchandiser, specification sheet, execution of route card, sampling – types of samples,
role of fashion buyer.

Suggested Books:

- Posner.H (2015)- *Marketing Fashion* – Laurence King Publishing –London.
- Fringes G.S (1999)- *Fashion From Concept To Consumer* –Prentice Hall –New Jersey
- Kincade.D.H,Gibson.F.Y(2010)-*Merchandising of Fashion Products*-Dorling
Kindersley India Pvt Ltd- South Asia.
- www.fashion merchandising.com


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HISTORY OF INDIAN CONSTUMES (Theory)

SEM- IV

Max. Marks: 74

Min. Marks: 26

Time Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 15 short-answer type questions carrying 2 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section-A

- Indus valley civilization.
- Mourayans and sanga period
- Kushan period.
- Gandhara period.
- Gupta period
- Medieval period.
- Mughal.
- British.

Section-B

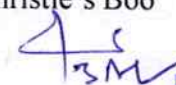
- Punjab
- Rajasthan
- Himachal Pradesh
- Gujarat
- Jammu and Kashmir
- Maharashtra .

(Identify distinguishing costume terminology throughout history and characteristics of each period and of every state mentioned above. Describe silhouettes, colors, fabrics, and accessories used for human adornment in different time Periods and same for states).

Suggested Books:

- Biswas, Indian Costumes, (2003), Publication Division
- "Ancient Costumes" By Gurey G. S, Publisher Popular Book
- "Ancient Indian Costumes" By Roshan Alkazi
- "Periods of Centralization and Development of Dressing in India" By Wlex A. Bradley C.(1970)
- History of World Costume, London, Peter Owen Ltd
- Boucher F. (1966) A History of Costume in the West, London, Thames and Hudson
- Parul Bhatnagar, Traditional Indian Costumes and Textiles, (2004), Abhishek Publications
- Ritu Kumar, Costumes and Textiles of Royal India, (1999), Christie's Boo




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B.VGD-145

COMPUTER AIDED FASHION DESIGN (PRACTICAL)
SEM- IV

Maximum Marks: 100

Min Marks: 35

- Introduction to Corel draw and tools.
- Importance and Uses of Corel Draw for Designers.
- Bitmap and Vector Images
- Application of various textures and Patterns.
- Drawing of fashion figure using different tools.
- Knowledge of export/save graphics.
- Create textures, prints design in Corel.
- Colour Palette and printing
- Introduction to Photoshop and its importance
- Tools of Photoshop
- Opening the Photoshop
- Concept of Path, layers
- Creating logos, collage, brochures, fliers, story board, mood board, labels, visiting cards.

Suggested Books:

- "Introduction to Computers" By Norton, Peter.
- "Introduction to Computer Fundamentals" By Bright.
- "Fundamentals of Computer Graphics" By Peter Shirley.
- "Adobe Photoshop and Textile Design" By Frederick L Chipkin.


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FASHION PRESENTATION-(PRACTICAL)

SEM-IV

Maximum Marks: 100

Min Marks: 35

Creating

- Mood Boards- Its application in designing costumes
- Theme Boards-Its direct relation to creating designs of costumes
- Clint Boards-the study of peculiar characteristics of a client to design special costume for him/her
- Swatch Boards-Use of swatches in surface texture of the design costumes
- Creating lines-lines with similar themes, similar fabrics & similar surface ornamentations
- Theme based illustrations-Themes could be picked up from nature, surroundings, objects, events, celebrities, sports, jewellery, toys
- Clint based designing of a garment.

Designing male and female apparels using any of the following categories themes

- Business wear/career/suits
- Dresses
- Outer wear
- Evening wear
- Swimming & Lingerie
- Bridal
- Night wear
- Maternity wear
- Sports wear
- Fashion illustration using different accessories etc
- Designing jewellery- Using various mediums

Hand Made Fashion Accessory

Suggested Books:

- Dawber ,Martin.Big Book of Fashion Illustration .UK.Batsford,2007
- John,Patrick.Fashion Design Illustration .UK.Batsford,1996
- Allen,Anny.,Seaman.Fashion Drawing The Basic Principales .UK.Batsford,1993
- Color Harmony a Guide to creative color combinations-Bride M. Whelan
- Designer guide to color-Volume - 1 - 5 -James Stockton
- Basic Design & Anthropometry-S.V. Bapat
- Colour Harmony -A Guide to creative colour combinations by Hideaki Ghijir


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PATTERN MAKING, GARMENT CONSTRUCTION (WOMEN'S APPAREL) (PRACTICAL)
SEM-IV

Max. Marks=100

Min. Marks=35

Design, Draft and construct the following garments.

- Skirt: Full circle, half circle, A- line, Gathered skirt, Novelty Gathered.
- Top – Front open, single dart, with or without collar and variation in sleeves.
- Night dress – Maxi, night suit, nighty with gown.
- Salwar - Gathered waist with tape or elastic, bottom design variation, with and without belt.
- Kameez - Fashioned neck, variation in sleeve.
- Ladies pant /Plazo: pant plazo, circular plazo, straight plazo
- Party wear dress: Lehnga choli, Gown, Designer suit
- Apron

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SYLLABUS
BACHELOR OF VOCATION
GARMENT DESIGNING
OUTLINE OF PAPER AND TESTS
FOR
B.VOC GARMENT DESIGNING PART-III
(Semester-5th and 6th)
Session 2021-22, 2022-23, 2023-24

Semester V							
Sr. No.	Title	Generic/ Skill Component	Theory/ Practical	Internal	External	Total	Credit
B.VGD-151	Entrepreneurship development programme	Generic	Theory	26	74	100	6
B.VGD-152	Personality development & Communication Skills-II	Generic	Theory	26	74	100	6
B.VGD-153	Garment Quality and Cost control	Skill	Theory	26	74	100	4
B.VGD-154	History of world costumes	Skill	Theory	26	74	100	4
B.VGD-155	Pattern making garment construction (Men's Apparel)	Skill	Practical	0	100	100	5
B.VGD-156	Fabric Surface Technique	Skill	Practical	0	100	100	5
	Total			104	496	600	30

SEMESTER VI							
B.VGD-161	Training (six month)	Skill	Practical	200	200	400	18
QP-Sourcing Manager, Level-7	Reference ID-AMH/Q0920 Evaluation shall be done by Apparel made-ups and Home furnishing Sector Skill Counsel					Result will be communicated to the university to the University by college	18

ENTERPRENUERSHIP DEVELOPMENT PROGRAMME (THEORY)
SEM-V

Max. Marks: 74

Min. Marks: 26

Time Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 10 short-answer type questions carrying 3 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section-A

Introduction to entrepreneurship - concept, definition, functions of an entrepreneur, characteristics of a successful entrepreneur.

Factors contributing to entrepreneurship – economic factors (capital, labor, market), non- economic factors (social condition- psychological factors- cultural factors-personality factors- government action – competitive factors)

Entrepreneurship and women empowerment– concept of women entrepreneur- problems – approaches to women empowerment-indicators- global initiatives – national initiatives (welfare and support services, socio-economic programme)

SECTION- B

Business plan and strategies – entry strategy (opening new business, purchasing franchises, acquiring an existing business) exit strategy, franchising- types, benefits, drawbacks

Export documentation – principle documents, auxiliary documents, mode of payment, mode of transportation.

E- Entrepreneurship – selling on internet, planning an e- business, niche marketing and the internet, marketing and e-business, e-business customer service

Suggested Books:

- Granger.M.M , Sterling.T.M- *Fashion Entrepreneurship* –Fairchild Books Publishing – NewYork
- Holt.D.H(1991) – *Entrepreneurship New Venture Creation* – Prentice Hall Publis
- Fundamentals of Entrepreneurship- Jagroop Singh, Kalyani Publishers


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PERSONALITY DEVELOPMENT & COMMUNICATION SKILLS-II (THEORY)
SEM-V

Max. Marks: 74

Min. Marks: 26

Time Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 10 short-answer type questions carrying 3 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section – A

Personality Development

- Important & Scope of personality development.
- Handling inferiority & superiority complex, doubt, fear & depressions. Positive thinking & negative thinking, self- confidence.
- Self presentation to prospective clients / colleagues/ seniors/
- Techniques to persuade influence & convince others.

Section – B

Communication Skills

- Essentials of Grammar :- parts of speech, punctuation, vocabulary building, phonetics
- Office management :-Types of correspondence, receipt : dispatch of mail, Role & function of correspondence.
- Letter & resume writing :- Types of letters :- Formal/Informal, Importance & Function.
- Drafting the applications.
- Presentation Skills :- importance of presentation skills
- Guidelines to make presentation interesting, Body language
- Forms of layout
- Interview preparation :-Types of interview, preparing for the interviews, attending the interviews, Postures & gestures.
- Group discussion & presentation :-Definition , process & guidelines.

Suggested Books:

- New Aspects of Personality Development And Communication Skills - Ram Sharma
- Personality Development And Soft Skills- Barun K. Mitra


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GARMENT QUALITY AND COST CONTROL (THEORY)
SEM- V

Max. Marks: 74**Min. Marks: 26****Time Allowed: 3 Hrs.****Instructions for the paper setter**

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 10 short-answer type questions carrying 3 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section-A

- Basics of Quality Control Definition and Scope of Quality Control – Establishing Merchandising Standards – Establishing Raw Material Quality Control specifications – Quality Control of Raw Material.
- Quality Control System Establishing Processing quality specification – Training Quality Control Personnel – The Quality Standard Control – Quality Control Inspection, Procedures for processing – Quality control of finished garments – Quality control and Government contacts – Quality Control for Packaging, Warehousing and shipping – Statistical Quality Control.
- Basics of Production control Function of Production control – Production, Analysis – Quality Specifications – Quantitative specifications – Scope of Apparel Manufacturing Activity – Coordinating departmental Activities – Distribution of Documents and Records.

SECTION: B

- Production Control System Type of Control forms – Basic Production Systems – Principles for Choosing a Production System – Evaluating Production Systems – Flow Process Grids and Charts – Basic Flow Process Grid Construction – Flow Process Grids for Production control
- Cost Control, Function of Cost Control: Types of Costs and Expenses – Apparel Manufacturing Cost Categories – Sales Cost Control – Purchasing Cost Control – Production Cost Control – Administration cost control – Cost Ratio Policies – the manufacturing Budget – Cash flow Control – Standard Cost Sheet, Break-Even Charts.

Suggested Books:

Patty Brown, Janett Rice, -Ready to wear apparel analysis, Prentice Hall, 1998.

Salinger, Jacob Apparel, —Manufacturing Analysis, New York, Textile Books Futs, 2001

Introduction to Clothing Production Management, A.J. Chuter, Second Edition, Black Well Publishing, Second Edition, 2004

Apparel Merchandising, Robin Mathew, First Edition, Book Enclave Publishing, 2008.

Textile Industry Development and Growth, Satish Tiwari, First Edition, Anmol Publications Pvt. Ltd., 2000.




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HISTORY OF WORLD COSTUMES (THEORY)
SEM-V

Max. Marks: 74

Min. Marks: 26

Time Allowed: 3 Hrs.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 10 short-answer type questions carrying 3 marks covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C

Section-A

Costumes of the Ancient World (300 B.C.-300 A.D.)

Mesopotamia, Egypt, Greece & Rome

Costumes of the middle Ages (300 A.D.-1500 A.D.)

Byzantine

English Costumes:

English costumes during middle ages:

Early middle ages.

Late middle ages.

Renaissance in Italy

Mannerism — 16th century.

Baroque — 17th century to 18th century.

Rococo — mid-18th century.

Section-B

The French costume

Renaissance in France (1500 A.D.)

Renaissance in France (1600 A.D.)

Renaissance in France (1700 A.D.)

The French revolution and thereafter (1790 A.D.-1900 A.D.)

The Directoire and Empire period (1790 A.D.-1820 A.D.)

The Romantic period (1820 A.D.-1850 A.D.)

The Crinoline period (1850 A.D.-1869 A.D.)

The Bustle period (1870 A.D.-1900 A.D.)

Suggested Books:

K. (1995) Survey of Historic Costume, New York, Fairchild Publications.

Sara, P. Tomp and Srah H. Fashion Costume and Culture (vol 1) The Ancient World, Thomas Gale.

James, L. Costume and Fashion: A Concise History; Thames and Hudson (2nd edition) 2002.

Jack Cassin-scott; The illustrated encyclopaedia of costume and fashion (from 1600 to present);

Block Hampton Press; London.

Bronwyn C; Costume and Fashion: A complete History, 2003.


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B.VGD-155

**PATTERN MAKING, GARMENT CONSTRUCTION (MEN'S APPARELS)
(PRACTICAL)
SEM V**

MAX. MARKS: 100

MIN.MARKS:35

DESIGNING, DRAFT AND CONSTRUCTION OF FOLLOWING GARMENTS:

- T-Shirt: different neckline, round neck, v neck, shirt collar.
- Full sleeve shirt – shirt collar, patch pocket, full sleeve with sleeve placket and cuff.
- Kalidar kurta - Kali piece, side pocket, round necks, half open.
- Pyjama – Waist elastic and tape attached, fly.
- Men's pent- front opening with zipper placket, side pocket variation in bottom design.
- Night suit


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B.VGD-156

Fabric Surface Technique
SEM- V

Maximum Marks: 100

Min Marks: 35

Printing with fabric paints

- Texture printing by combining any 3 different types of textures.
- Printing of cotton using block – vegetables and wooden blocks(2samples each)
- Printing on the polyester fabrics by pigment colour
- Printing on cotton fabric with natural colours

Dyeing Techniques

- Tie and dye of cotton with direct dyes (resist print)
- Batik Dyeing
- Batik on the cotton fabrics (resist Dying)

Prepare the article of Dying and Printing
Make the presentation on any topic

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**INDUSTRIAL TRAINING / BOUTIQUE TRAINING
SEM- VI**

Internal: 200

External: 200

**A compulsory internship for 6 months in an Industrial training/Boutique training/
Export house.**

Objectives-

- To impart knowledge on working of apparel industry
- To gain practical knowledge on different departments apparel industry
- To gain knowledge of self employed
- In depth of knowledge of textiles and handcrafts
- To learn research and documentation of various Indian crafts by visiting and meeting the craftman and artisans personally.

Documentation should contain the following

- Introduction
- Aim
- Objectives
- Hypothesis
- Procedure
- Design
- Pictures of Crafts/work
- Information Collection
- Results and discussion
- Conclusion
- Bibliography

Portfolio- Students will organize their best work in a single designer lodge.


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PUNJABI UNIVERSITY, PATIALA

**OUTLINES OF TESTS,
SYLLABI AND COURSES OF READING
FOR
M.Sc. (Fashion Design and Technology)
PART-I
(Semester I & II)
FOR
2022-23, 2023-24**



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SYLLABUS

M.Sc. (Fashion Design and Technology)

Programme Code: (FDTM2PUP)

PART-I

(Semester I & II)

2022-23, 2023-24

ACADEMIC SESSIONS

OUTLINES OF TESTS

The examinations of I and II semesters will be held in November/December and May/June, respectively. The students of this course shall also undertake in plant training/industrial training for 4-6 weeks at various industries/institutions/Research & development centers etc. after the completion of theory & practical examination of the III semester. Weightage to different components for internal assessment will be given as following-

1.	Attendance	20%	%of the Total Marks of the Internal Assessment
2.	Written Assignment/project work	40%	
3.	Two Mid-Semester Tests/Internal Examination	40%	

The awards of internal assessment shall be dispatched by the Head of the Department before the commencement of semester examinations. The Assignment/ Project will be allotted to all the students from the respective syllabi of theory papers. The assessment of Assignment / Project will be given by the concerned teacher to the office of the Head of the department in prescribed Performa.

M.Sc. FDT Part-I**Semester-I (Exam: November/December)****Theory Papers**

Subject Code	Paper Name	Internal Assessment	External Assessment	Total marks	Credit hours/week
FDTM1101T	Fabric Science	26	74	100	6
FDTM1102T	Garment Production Management	26	74	100	6
FDTM1103T	Consumer Behavior	26	74	100	6

Practical Papers

	Paper Name	Internal Assessment	External Assessment	Total Marks	Credit Hours/week
FDTM1104L	Home Textiles	-	50	50	3
FDTM1105L	Textile Design Development	-	50	50	6
FDTM1106L	Pattern Making & Construction Techniques	-	50	50	6
FDTM1107L	Seminar	50		50	2

Semester-II (Exam: May/June)**Theory Papers**

	Paper Name	Internal Assessment	External Assessment	Total Marks	Credit Hours/week
FDTM1201T	Textile Wet Processing	26	74	100	6
FDTM1202T	Research Methodology	26	74	100	6
FDTM1203T	Communication Skills	26	74	100	6

Practical Papers

	Paper Name	Internal Assessment	External Assessment	Total Marks	Credit Hours/week
FDTM1204L	Textile Wet Processing		50	50	2
FDTM1205L	Fashion Illustration	-	50	50	6
FDTM1206L	Advanced Apparel Construction	-	50	50	8
FDTM1207L	Project Work -I	50		50	2
	Grand Total for Semesters I & II	225	744	100	73

*Note: At the end of the IInd Semester, the candidates will undergo internship training of 4-6 weeks in a textile designing unit/ apparel manufacturing unit/ textile dyeing and printing unit/ apparel export unit/ fashion house/ craft cluster etc.to understand the existing working practices, conditions and acquire an in-depth technical know-how of the unit.

The candidates shall prepare a report on the visit made to the unit and submit the report in the IVth semester

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M.Sc. (Fashion Design and Technology (Semester-I)

Semester-I

Theory paper I- Fabric Science

Credit: 6 Hrs. /Week

Maximum Marks: 74

Time : 3 Hrs.

Objectives:

- To enable the students to identify various fibers and yarns and their uses.
- To help students understand various types of fabric formation techniques.

Instructions for paper setter

The question paper will consist of three sections A, B and C. Section A and B will have 4 questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 10 short-answer type questions which will cover the entire syllabus uniformly and will carry 3 marks each.

Instructions for candidates

Candidates are required to attempt two questions each from Sections A and B of the question paper and the entire Section C.

Section-A

Polymer- Definition, types,

Polymerization- addition & condensation

Significance of molecular structure - crystalline & amorphous

Classification of Textile Fibers based on source and origin

Manufacturing and properties (Physical and chemical) of Natural Fibers –

Cotton, Wool, Silk, Linen

Manufacturing and properties (Physical and chemical Synthetic Fibers-Polyesters, Polyamide (Nylon 6, Nylon 66), Acrylic, Rayon, Spandex

Innovation in fibers - Micro fibers, Hollow fibers, Nano fibers

Introduction, properties and uses to sustainable fibers

Yarns-

Types of Yarns- spun and filament, carded and combed, simple, novelty and textured

a. Yarn properties in relation to fabric-Twist, count, diameter determination in yarn, Yarn numbering system

b. Yarn Construction –

- Staple yarns-Conventional ring spinning, open end spinning, friction spinning, self-twist spinning twist less spinning, airjet spinning, waterjet spinning
- Filament yarns- Wet, Dry and melt spinning.

Shrinkage in fabrics- Laundering shrinkage, Thermal shrinkage & Heat Setting in dimensional stability of fabrics.

Thermal conductivity, air permeability, porosity of fabrics

Section-B

Looms- Parts of a simple loom and their functions.

Different types of looms-

Shuttle looms- pit loom

Shuttle less looms- Rapier, Multiphas, Airjet, Waterjet

Fabric Construction - Weave & its types, ends & picks, count, weight, thickness determination, Fabric defects.

Characteristics and advantages of woven, knits and non-woven fabrics;

Methods of production of non- woven-

Braiding

Netting

Lace etc;

Difference b/w Woven & Knit fabrics

Knitting technology-

Different types of knits-Weft and Warp knitting

Weft Knitting- Plain Knit/single jersey (Tuck, Pile, Float, Drop), purl stitch, Rib stitch

Warp knitting- Tricot, Raschel, Simplex, Milanese, Crotchet, Weft insertion warp knit,

Warp knitted fabrics- Single jersey, Double Jersey, Wale Deflection, Lace, Rib, jacquard types.

Different types of knitted garments and quality control

Note: • Students will learn to identify fibers through Visual, burning, microscopic and solubility test.

They will learn about Identification of yarns, blends, Fabric count, Evaluation of crimp and twist in yarn, make a file.

Market survey will be conducted to understand varieties of fabrics available in the market for handling (physical appearance, weaves, uses and care).

References:

Textiles: Fiber to Fabric 6th Edition, Bernard P. Corbman,.International students" edition,

McGRAW Hill International Edition book co Singapore (1985).

Textile chemistry, peters.r.h. Vol i, ii, textile institute Manchester 1970.

Technology of textile processing, Shenai.V.A. Vol i, ii, v, vii, sevak publications, Bombay, 1981

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Textile Science 2nd Edition, E.P.G. Gohl & L.D.Vilensky, CBS Publishers and Distributors 2006
Fabric science, 5th edition, Joseph J.P. et al. Fairchild publications, New York, 1990
Norman Hollen and Jane Saddler, "Textiles" Second Edition. (1949), The Macmillan
Company, New York. Collier-Macmillan Limited, London.

Semester-I
Theory paper II- : Garment Production Management

Time Allowed: 3 Hrs.
Teaching Time: 6 Lectures/week

Max. Marks: 74

Objectives

- To familiarize students with principals of management and various departments in garment industry
- To acquaint the students with garment production process, methods and technologies adopted in apparel industry.

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 10 short-answer type questions carrying 3 marks each covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C.

SECTION-A

Organizational structure of Apparel Industry
Principles of Management

Working of various departments in apparel industry -

- Design Department
- Marketing Department
- Finance Department
- Purchasing Department
- Production Department
- Operation department

Manufacturing Technology-

- Cutting & Cutting Room
- Marker planning,
- Marker Efficiency Method & use of marker plan.
- Introduction to concept of CAD/ CAM in apparel Construction



Spreading-Methods of spreading of fabric and requirements of the spreading process Cutting the fabric – objectives and Types of cutting machines and advantage of each-Straight Knife, Round Knife, Band Knife, Die Cutter, End cutters, Notches. Different types of blades of cutting knives. Reasons for Quality problems in cutting

SECTION-B

Fusing Technology

Sewing Technology

- Sewing – properties, types
- Stitch – types
- Sewing Machines, machines, Needles
 - Sewing threads – types of fiber, construction and furnish, thread size, thread package thread costs, thread properties and seam performance.

Use of components and Trims

Alternative Methods of forming materials –

- Fusing
- Welding and adhesives
- Moulding

Pressing Technology

Ware Housing

References:

A.J.Chuter, Introduction to Clothing Production Management, Blackwell science
Kilgus, R. Clothing technology; From Fibre to Fashion, Verlag Europa Lehrmittel, 1996.

Tarlos, E. Clothing matters; Questions of dress and identity in India, Hurst 1996

Gaetan, M. Sewn product engineering and reference manual, Bobbin publications 1977

Ruth E Clock, Apparel Manufacturing & sewn product analysis

Tyles D J, Material Management in Clothing Production, Blackwell Science Pub.

Carr Harold and Latham Barbara "The technology of clothing manufacture" Blackwell Publisher (1994-2004)

Kaplan, NS "Changing Trends in Apparel Industry" Abhishek Publisher (2004)

Cooklin Gerry "Introduction to Clothing manufacture, Blackwell Science, UK, 1991

Bheda Rajesh, "Managing Productivity in the Apparel Industry" CBS Pub, New Delhi

Semester-I
Theory paper III- : Consumer Behaviour

Time Allowed: 3 Hrs.
Teaching Time: 6 Lectures/week

Max. Marks: 74

Objectives:

- To acquaint students with consumer behaviour and its effects on the fashion market

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Sections C will have 10 short-answer type questions carrying 3 marks each covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C.

SECTION-A

Consumer Behavior: Need and Importance of studying Consumer Behavior
Scope, Importance and characteristics of consumer behavior in fashion marketing

Types of consumers, Factors influencing consumer behavior
Consumer Education and agencies providing consumer education,

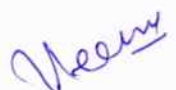
Aspects of Consumer Education
Theories of consumer behavior: Economical, Psychological, and Socio-cultural

Personality and understanding consumer diversity
Brand personality, Self-concept and Self-image, Virtual self
Self- concept and Marketing segmentation, lifestyle trends and consumer behavior

SECTION-B

Attitude- Attitude Formation and Attitude Change
Sources and functions of attitude, Models of Attitude, Attitudes in predicting behavior
Lifestyles and psychographics

Consumer Research- Relevance of market research with consumer behavior, approaches towards consumer behavior research, consumer research ethics, Steps in the consumer research process



Consumer and business ethics, consumer concern for environmental issues and fashion industry
Dark side of consumer behavior
Consumer Rights and responsibilities, Consumer Redressal

Consumer organizations and their functions, Consumer co-operatives
Consumer protection Acts

References:

Consumer Behaviour – Ramanuj Majumdar PHI learning PVT Ltd.,
Consumer Behaviour, CL Tyagi and Arun kumar, Atlantic publishers
Consumer behaviour, India Edition, Jay D. Lindquist and M. Joseph Sirgy, Cengage learning.
Consumer behaviour, concepts, Applications and cases – MS Raju, Dominic Xardel, Vikas publishing House PVT Ltd.
Loudon, D.L. and Bitta A.J. Della, Consumer Behavior, Fourth Edition, 2002, Tata McGraw-Hill, New Delhi.
Peter, P.J. and Olson, J.C., Consumer Behavior and Marketing Strategy, Seventh Edition, 2005, McGraw-Hill Higher Education.
Schiffman, L.G. and Kanuk, L.L., Consumer Behavior, Eight Edition, 2004, Prentice Hall, India.

Semester-I Practical Paper I- Home Textiles

Credit: 3 Hrs. /Week

Maximum Marks: 50

Time : 4 Hrs.

Objectives:

- To implement the students creativeness in decorating the home products.
- To innovate a product using different ornamentation skills
- To enable the students to understand the progression of product design

Content:

Students will design and Construct Products on any one of the following categories using different techniques (Cut Work, Smoking, Shearing, Pleats, Patchwork, Applique, Mirror Work, Painting and printing):

Living Room Linens- Sofa Covers, Cushion Covers, Wall Hangings, Curtain, Carpet

Kitchen Linen –Apron, Gloves, Table Linens, Runner, Napkins, Table Mat

Bed Linen - Bed Spread /Bed Sheet, Baby Blanket, Pillow Covers, Pillow

Bath Linen-Hand Towel, Bath Towel, Bath Robes, Shower Caps

Semester-I
Practical Paper II-Textile Design Development

Credit: 6 Hrs. /Week
Time : 3 Hrs.

Maximum Marks: 50

Objectives:

- To make students understand and apply the knowledge of principle and elements of art in designing
- To enable the students to understand the concept of creating design

Understanding principle and elements of art in relation to textile designing
Development of designs-Using Natural, Geometrical, stylized and traditional motifs
Enlargement and reduction of motif
Concept of design Repeat

Techniques of Designing and product development:

Stencil,
Screen,
Block printing and
Hand painting through colour blending.

References:

- Grosicki, Z.J. (1989) Advanced Textile Design (4th Ed) - Watson's, London, Newness Butterworths.
- Meller S and Eiffer. J (1991) Textile Design, London, Thames and Hudson
- Prakash., Traditional Indian Motifs, The Design Point, Bombay.
- Sumathi, G.J. "Elements of Fashion and Apparel Design" New Age International Publishers, New Delhi, 2002
- Wilson Eva (1994) 8000 Years of Ornament, London, the British Museum Press

Semester-I
Practical Paper III- Pattern Making and Construction Techniques

Credit: 6 Hrs. /Week
Time : 4 Hrs.

Maximum Marks: 50

Content:

- Basic Knowledge of Tools and Equipment used for measurements, drafting, cutting and stitching and finishing.
- Inter-relationship between fabric, sewing thread, stitch length and needles
- Basic Terminology: related to apparel construction



- Methods of taking measurements and units of measurements
- Taking measurements from body, pattern and readymade garments

Drafting and adaptation of-

- Basic sleeve variations - gathered, puff, flare, leg O' mutton, petal, cowl, cap, dolman, bishop, dropped shoulder, kimono, magyar, raglan, saddle, circular etc.
- Collars - Cape, Peter pan, Mandarin, coat, shawl, shirt, sailors, cowl
- Skirt:
A line, flared, gored, pegged, skirt with yoke
Pleated skirt- knife, box, inverted box
Circular
Godets and variations
Tiered skirt
- Interpretation of style lines - by dart manipulation using slash and spread method.

Understanding the characteristics, uses, collection and market survey on various types of accessories-

- Support Materials: Interfacing, Lining, Interlining
- Support Devices: Shoulder pad, Sleeve headers and Collar stays
 - a. Closures: Zippers, Buttons, Button holes, Hooks 'n' Eye, Press 'n' Studs, Buckles, Belts
 - b. Trims: Ribbons, Laces and Braids
 - c. Non-woven

Sample preparation of the following:

- Different types of Seams and Hems: Plain seam, Bound seam, Bias binding, Hand Overcast; French seam, Lap seam, Flat Fell seam
- Facing: Armhole Facing, Basic Neckline and All in one facing
- Darts and Tucks: Single dart, Double pointed dart, Dart tuck, Pin tuck, Blind tuck
- Plackets Placket: Inseam Placket, Bound Placket, Faced Placket
- Band & Cuffs: Closed-Band, One Part, Two Part, Waist bands
- Sleeves: Separate Sleeve, Cut-in-one
- Collar: Flat Collar, Stand and Roll Collar
- Closure: Buttonholes, Button Loops, Hooks & Eyes, Zippers
- Pockets: Applied Pocket, Set-in and Slash Pockets

References:

Armstrong, J., Draping for Fashion Design, Fair child Publications, New York.2004
 Bray N., Dress Pattern Designing, 2003 (5th edition) Willey Blackwell.
 Reader's Digest-Complete guide of sewing, The Reader's Digest Association Ltd., London
 Relis, Nurie., & Jaffe, Hilde., Draping for fashion Design, Prentice Hall career & Technology, New Jersey.1993
 Thomas, Anna, Jacob, The Art of Sewing, UBSPD Publishers Distributors Ltd, New Delhi

Penelope, Cream., The Complete Book of Sewing- A Practical Step by Step Guide to Sewing Techniques ADK Publications Book, New York 1996
Pattern Making for Fashion Design by Helen Joseph Armstrong, 2005, Prentice Hall

Semester-I
Practical Paper IV- Seminar

Credit: 6 Hrs. /Week

Maximum Marks: 50

Time : 4 Hrs.

Objectives:

- To enable the students to understand basic fashion concepts.
- To create awareness amongst students regarding current trends related to Fashion Field.

1. Students will prepare notes on the following topics:

- Understanding Basic Fashion terminology-Fashion, Fads, Styles, classics, high fashion, mass fashion, design, trend, haute couture, couturiere, knockoffs and prêt-a-porter, Fashion Leaders and Followers.
- Knowledge of Principals of Fashion, Fashion cycle, length of fashion cycle.
- Factors influencing fashion- Geographical, Psychological, Economical and Social
- Theories of fashion adaptation –
- Traditional fashion adoption (Trickledown theory)
- Reverse adoption (Bottom up theory)
- Mass Dissemination (Trickle across theory).
- National & International designers and fashion centers
- Fashion forecasting- concept of season, fairs and international markets
- Fast Fashion, Slow fashion, Recycling and up cycling

2. Students will prepare a report on topic related to fashion or allied field. Topics can be taken related to some industry, survey, product development or some concern related to fashion & present a seminar along with power point on the selected topic
3. Students will present collections and achievements of any one designer.

References:

Gini Stephens Frings, Fashion (from concept to consumer), Sixth Edition, 1999, Prentice Hall Internal (UK) Limited, London
Kathryn Mckelvey, Fashion Source Book by (Second Edition), (2006), Blackwell Publishing
The Fairchild Dictionary of Fashion by Charlotte Mankey Calasibetta, (third edition), 2005, Fairchild Publications

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M.Sc. (Fashion Design and Technology (Semester-II)

Semester-II Theory Paper I- Textile Wet Processing

Credit: 6 Hrs. /Week

Maximum Marks: 74

Time : 3 Hrs.

Objectives:

- To acquaint the students with pre and post dyeing wet processing with recent developments.
- To impart knowledge about textiles dyeing and printing
- To enable the students to understand textile finishing and its applications in textile Industry

Instructions for paper setter

The question paper will consist of three sections A, B and C. Section A and B will have 4 questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 10 short-answer type questions which will cover the entire syllabus uniformly and will carry 3 marks each.

Instructions for candidates

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C.

Section-A

Dyeing: Dyeing theory, Dyeing auxiliaries

Pre dyeing preparation of fabric- Scouring, bleaching, Desizing

Dyes: Definition and Types (Natural and Synthetic Dyes)

Home & Industrial Dyeing - Fibre Dyeing, Yarn Dyeing, Fabric Dyeing & Garments Dyeing.

Application of Direct, Acid, Basic and Azoic dyes on Natural Fibres - Cotton, Silk and Wool

Dyeing defects and their remedies

Recent advances in dyes and dyeing technology - microwave dyeing, super critical CO₂ dyeing, ultrasonic dyeing, plasma treated dyeing – principle, mechanism and procedure for dyeing.

Printing:

Introduction to printing, Difference between dyeing and printing

Types of printing: Machine Printing, Hand Printing.

Recent advances in printing technology

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Section-B

Finishes – Definition and advantages, most commonly used substrate for finishing, Classification of Finishes

Finishes for preparatory processes- Desizing, scouring, decating bleaching, mercerization degumming, carbonizing, milling, tentering

Finishes improving handle and appearance-

- Softeners, stiffening agents, Optical whiteners,
- Calendaring, Enzyme wash (bio- polishing, stone wash, sand wash), Glazing, Moireing, Schreinerizing Embossing. Parchmentization, Sizing, Weighting, Shearing, Brushing, Fulling, Beetling, Flocking, Napping, Peach finish

Functional Finishes- Antimicrobial Finishes, Moth proof, Aroma therapy- Fragma series/ moisturizers/ essential oils/ aloe vera, anti-static finish, Dry soiling of clothing, bio softening, cool finish (snocool), hydro-phillic finish, Flame retardant, heat setting, coating and lamination, UV protective finish, water oil repellent finish, wrinkle free finish, Anti-crease/ durable press finishes.

Micro encapsulation techniques in finishing process

Recent trends in wet processing

Study of enzymes, Role of enzymes for various textile processes-desizing, scouring, bleaching, softening, bio-polishing, degumming

References:

Textiles: Fiber to Fabric 6th Edition, Bernard P. Corbman, „International students“ edition, McGRAW Hill International Edition book co Singapore (1985).

Textile chemistry, Peters.R.H. Vol i, ii, textile institute Manchester 1970.

Technology of textile processing, Shenai.V.A. Vol i, ii, v, vii, sevak publications, Bombay, 1981

Textile Science 2nd Edition, E.P.G. Gohl & L.D.Vilensky, CBS Publishers and Distributors 2006

Fabric science, 5th edition, Joseph.J.P. Et.al. Fairchild publications, New York, 1990

Norman Hollen and Jane Saddler, „Textiles“ Second Edition. (1949), The Macmillan Company, New York. Collier-Macmillan Limited, London.

Blackenbury. Terry., Knitted Clothing Technology, Blackwell Publishing 2005.

Joshnson. Henry., Introduction to Knitting Technology, Abhishek Publication, 2006.

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Semester-II
Theory Paper II- Research Methodology

Credit: 6 Hrs. /Week

Maximum Marks: 74

Time : 3 Hrs.

Objectives:

- To understand the methodology of research, research terms, its principals and techniques,
- To understand the various methods of conducting research.
- To develop skills in conducting research from planning a study to report writing

Instructions for the paper setter

The question paper will consist of three sections A, B & C. Section A & B will have four questions each from the respective sections of the syllabus and will carry 11 marks each. Sections C will have 10 short-answer type questions carrying 3 marks each covering the entire syllabus uniformly.

Instructions for the candidate

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C.

SECTION-A

Meaning and Objective of Research

Type of Research-

- Descriptive/Analytical Research
- Applied v/s/ Fundamental Research
- Qualitative/Quantitative Research
- Other types of Research

Significance of research and scientific method

Research Process - Criteria of goods research.

Research Problem - Identification, selection and defining research problem

Research Design - Meaning and purpose of research design, Features of a good research design. Different research designs.

Measurement & scaling techniques

SECTION-B

Sampling Design- Implication and steps involved in sample design, Criteria of selection of sample, Different types of samples.

Collection of data - primary and secondary



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Interpretation of data - Techniques of analysis and precautions in interpretation

Role of Computer in Research

Report Writing - Significance, Different Steps in report writing, Layout of report. Mechanics of writing a research reports, Precautions of writing research report.

References:

Statistical Methods - S.P. Gupta, Sultan Chand & Sons, 1972

Kothari, C.R., Research methodology-methods & techniques, New age International Publishers, New Delhi

Hand Book on Methodology of Research - R.P.A. Devadas.

Statistical analysis in Psychology and Education- George A Forgunson, Mc.Graw Hill Book Co. 1965

Statistical Methods for Research Workers, Fisher R.A., Hafner Publishing Company, Iric. 1948.

A.K.P.C. Swan, Business Research Methods and Statistics

Semester-II

Theory Paper III- Communication Skills

Credit: 6 Hrs. /Week

Maximum Marks: 74

Time : 3 Hrs.

Instructions for paper setter

The question paper will consist of three sections A, B and C. Section A and B will have 4 questions each from the respective sections of the syllabus and will carry 11 marks each. Section C will have 10 short-answer type questions which will cover the entire syllabus uniformly and will carry 3 marks each.

Instructions for candidates

Candidates are required to attempt two questions each from Sections A & B of the question paper and the entire Section C.

Section-A

Communication – Its meaning and importance.

Different types of communication- One way or two way communication

Essentials of good communication

Forms of communication- Verbal and Non-verbal

Oral-Telephonic communication

Written –Drafting reports, notices, agenda notes, business correspondence, circulars, press releases and advertisements.

Nonverbal-Importance of non-verbal communication, Positive gestures, symbols and signs

Modern forms of communication-Fax, Internet/e-mail, video conferencing
Barrier of communication

Mass Communication:- Concept, Definition, Scope,
Functions of Mass Communication through different media – Electronic media, Print media,
Cyber media,
Role of media in society
Need of Mass Communication in Fashion world-Importance and classification

Section-B

Group discussions- Advantages and techniques of conducting group discussions

Resume Writing and job applications, applications for business (Application for loan, refund, and advance salary)

Business Letter- Business Letters (Types, Essentials and Layout) letter of enquiry, letter of quotation, letter of orders, letter of advice, letter of trade reference, circular letters, letter of complaint and adjustments, sales letter, credit letters and status inquires, collection letters.

Essentials of technical report writing and proposals

References:

Gupta C.V. Business Communication and Customer Relations, Sultan Chand and Sons
Pal Rajender & Korlahalli J.J., Essentials of Business Communications, Sultan Chand & sons.
Chaturvedi, P.D., Business Communication, Pearson Publication
Jain.V.K. and Biyani Om Prakash, Business Communications, Sultan Chand & company Ltd.
Mohan, Krishna and Beerjee, Meera, Developing Communication Skills, Macmillan Press

Semester-II

Practical Paper I-

Textile Wet Processing

Credit: 2 Hrs. /Week

Maximum Marks: 50

Time : 4 Hrs.

Objectives:

- To know the difference between dyeing and printing.
- Understand the different methods of transferring the designs on fabric
- To acquaint students with different methods of dyeing and printing

Dyeing



Pre-Dyeing preparatory Processing - Desizing Starch, Scouring, Bleaching Washing, Drying
Dyeing of Cotton with: Direct dyes, Reactive dyes
Dyeing of Silk and Wool with – Acid, Basic
Extraction and application of natural dyes on cotton silk and wool
Resist Dyeing of Fabric- Tie and dye, Batik
Evaluation of color fastness to washing, ironing, crocking, perspiration and sunlight

Printing:

Preparation of sample for printing – cotton, silk, polyester and jute
Preparation of printing paste
Preparation of samples for hand block printing
Preparation of stencil & use stencil printing and spray painting.

The Record should be submitted at the time of external evaluation

Semester-II

Practical Paper II-

Fashion Illustration –I

Credit: 6 Hrs. /Week

Maximum Marks: 50

Time : 4 Hrs.

Objectives:

- To enable the students to Illustrate the apparel design for principles and elements of designs.
- To acquaint the students with sketching the basic shadings and fashion figures.
- To acquaint the students with technique of creating different textures
- To create understanding of the human body in proportions relevant to fashion illustration.

Content:

- Study of human figure in relation to fashion proportion of a perfect figure
- Sketching of Stick figures and Block figures
- Detail in study in pencil and colour with light and shade of different types of folds, gathers and shape of fabric in dresses.
- Effect of principal and elements of design in dresses
- Sketching of facial features- Eyes, Ear, Nose, Legs and Feet, Arms, Hair styles
- Fashion figure: 8½, 10 and 12 heads - front, back and ¾th profile,
- Fleshing of Fashion Figure
- Creating various textures using different techniques and medium- Nets, Knits, Velvet, Lace, Denims, Fur, Corduroy
- Illustration of Dresses depicting various textures, prints and drapes

Amey

Meenu

References:

- Fashion Drawing—the Basic Principles by Anne Allen & Julian Seaman-B.T. Batsford, London.
Fashion Design Drawing & Presentation by Patrick John Ireland, 4th Edition, New Delhi, Om, 2005.
Fashion Design Illustration Children by Patrick John Ireland- London, B.T. Batsford, 1995
Fashion Source Book by Kathryn Mc Kelvey- 4th Edition, New Delhi, Om, 2005.
Fashion Sketchbook by Bina Abling, 4th Edition, New Delhi, Om, 2005.
Illustrating Fashion by Kathryn Mckelvey & Janine Munslow-Blackwell Pub. Co.USA, 2007
New Fashion Illustration by Martin Dawber- Singapore: Page One-2005.

Semester-II **Practical Paper III- Advanced Apparel Construction**

Credit: 8 Hrs. /Week

Maximum Marks: 50

Time : 4 Hrs.

Objectives:

- To enable the students to understand the concept of drafting and pattern making
- To enable the students to develop skills in garment construction commercial
- To develop skill in pattern grading
- To learn the art of preparing commercial paper patterns for different garments
- To learn the importance of

Content-

Understanding concept of Drafting and Pattern Making

- Fitting- Factors affecting good fit in garments
- Reasons for poor fitting and their remedies defects for upper and lower garments

Designing, Pattern development and construction of-

- Children's garment of recent fashion- any 3 styles
- Women's garment of recent fashion- any 3 styles
- Men's garment of recent fashion- any 2 styles
- Design and construct garment for a Party wear and Ethnic dress
- Commercial paper - pattern of any one above mentioned garments.
- Grading of any two patterns.

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References:

Basic Processes and Clothing Construction - Doongaji, Sherie and Desh Pande R
Bernard Zamkoff and Jeanne Price, Creative Pattern Skills for Fashion
Design(f.i.t Collection),1990, Publisher: Fairchild Books & Visual.
Helen Joseph Armstrong, Pattern making for Fashion Design, 2000,
Dorlin Kindersley (India)Pvt.Ltd. India.
Sandra Betzina, Fast Fit – Easy Pattern Alterations for Every Figure, 2003 Taunton Pr.
Matric Pattern Cutting by Wini Fred Aldrich-New Delhi Om Book

Semester-II
Practical Paper IV- Project Work -I

Credit: 2 Hrs. /Week

Internal Marks: 50

Time : 2 Hrs.

Objectives:

- To orient students to the process of research.
- To enable the students to identify a problem for undertaking the research project

Content-

- Allocation of Projects to M.Sc. FDT (Semester-II) students specifying focus areas or topic of their choice by the end of semester by the teachers
- Students will submit synopsis / project proposal for approval to respective guide.
- Students will present research proposal in seminar along with power point on the given topic
- Synopsis will be discussed, modified and finalized in staff committee

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Punjabi University, Patiala

Scheme of Studies and Syllabus for B.Sc. (Hons. in Agriculture) Part IV (Sem. VII & VIII)

Session 2019-2020, 2020-2011 & 2021-22

Copy to be submitted to the Controller of Examinations for the Session 2023-24, 2024-25

B.Sc. (Hons. in Agriculture) Part-IV (Semester-VII)

Session : 2019-20, 2020-21 & 2021-22

Session : 2019-20, 2020-21 & 2021-22						
Paper No.	Subject	Theory		Practical	Total	
Compulsory subjects		External	Internal			
PATII-401	MUSHROOM CULTIVATION	45	15	40	100	
ENTO-401	APICULTURE, SERICULTURE, PISCICULTURE AND LAC CULTURE	45	15	40	100	
ABM-401	AGRI- BUSINESS MANAGEMENT	45	15	40	100	
					Sub-Total	300
CHOOSE ANY ONE OF THE FOLLOWING OPTIONS:						
OPTION-I: AGRONOMY						
AGRON-401	PRINCIPLES AND PRACTICES OF WEED MANAGEMENT	45	15	40	100	
AGRON-402	FARMING SYSTEM AND SUSTAINABLE AGRICULTURE	45	15	40	100	
AGRON-403	RAINFED FARMING AND WATERSHED MANAGEMENT	45	15	40	100	
AGRON-404	MODERN CONCEPTS IN CROP PRODUCTION	45	15	40	100	
AGRON-405	PRINCIPLES AND PRACTICES OF WATER MANAGEMENT	45	15	40	100	
					Sub-Total	500
OPTION-II : HORTICULTURE						
HORT-401	NURSERY MANAGEMENT OF HORTICULTURAL CROPS	45	15	40	100	
HORT-402	COMMERCIAL FRUIT PRODUCTION	45	15	40	100	
HORT-403	COMMERCIAL VEGETABLE PRODUCTION	45	15	40	100	
HORT-404	COMMERCIAL FLORICULTURE AND LANDSCAPE ARCHITECTURE	45	15	40	100	
HORT-405	SEED PRODUCTION OF HORTICULTURAL CROPS	45	15	40	100	
					Sub-Total	500
Option-III: Genetics and Plant Breeding						
GPR-401	PRINCIPLES OF CYTOGENETICS	45	15	40	100	
GPR-402	PLANT GENETIC RESOURCES AND CROP EVOLUTION	75	25	-	100	
GPR-403	HETEROSIS BREEDING	45	15	40	100	
GPR-404	MUTAGENESIS AND MUTATION BREEDING	75	25	-	100	
GPR-405	BIOTECHNOLOGY FOR CROP IMPROVEMENT	45	15	40	100	
					Sub-Total	500
Total (Compulsory + Optional)					300+500 = 800	

300

Paper No.	Subject	Theory		Practical	Total
		Internal	External		
COMPULSORY SUBJECTS					
EXT-401	EXTENSION METHODOLOGIES AND COMMUNICATION SKILLS FOR TECHNOLOGY TRANSFER	45	15	40	100
AGRI-401	PROTECTED CULTIVATION AND SECONDARY AGRICULTURE	45	15	40	100
PDC-401	PERSONALITY DEVELOPMENT AND COMMUNICATION SKILLS	45	15	40	100
CHOOSE ANY ONE OF THE FOLLOWING					
OPTION-I: AGRONOMY					
AGRON -406	FERTILIZER USE IN CROP PRODUCTION	45	15	40	100
AGRON 407	CROPPING SYSTEM	45	15	40	100
AGRON-408	WATER MANAGEMENT AND MICRO IRRIGATION	45	15	40	100
OPTION -II: HORTICULTURE					
HORT-406	POST HARVEST MANAGEMENT OF HORTICULTURE CROPS	45	15	40	100
HORT 407	TISSUE CULTURE AND MICROPROPAGATION TECHNIQUES I HORTICULTURE	45	15	40	100
HORT 408	BREEDING OF HORTICULTURAL CROPS	45	15	40	100
OPTION -III: GENETICS AND PLANT BREEDING					
GPB-406	BREEDING FOR BIOTIC AND ABIOTIC STRESS RESISTANCE	45	15	40	100
GPB 407	IPR, BIODIVERSITY AND BIOSAFETY	75	25	-	100
GPB-408	POPULATION AND BIOMETRICAL GENETICS	45	15	40	100

Signature

COMPULSORY PAPER: PATH-401: MUSHROOM CULTIVATION

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Historical development of mushroom cultivation and present status, taxonomy, classification, food, medicinal value, uses of mushroom, edible and poisonous mushrooms.
2. Life cycle of cultivated mushrooms, reproduction and strain improvement, maintenance of pure culture, facilities required for establishing commercial spawn lab.
3. Preparation of substrate for mushroom cultivation, preparation and maintenance of spawn
4. Long, short and indoor composting methods, formulae for different composts and their compulation, qualities and testing of compost, uses of spent mushroom compost/substrate.

Section B

5. Facilities for setting up mushroom farm for seasonal and environmentally control cultivation, requirement and maintenance of temperature, relative humidity, CO₂, ventilation in cropping rooms
6. Cultivation technology of *Agaricus bisporus*, *Pleurotus* sp., *Calocybe indica*, *Lentinus edodes* and *Ganoderma lucidum*.
7. Insect pests, diseases and abnormalities of cultivated mushroom and their management
8. Post-harvest processing and value addition, economics of mushroom cultivation, biotechnology and mushroom cultivation.

COMPULSORY PAPER: PATH-401: MUSHROOM CULTIVATION

Practical

Maximum Marks: 40

Time: 3 hours

Pass Marks: 40%

Teaching hours: 4 hours per week

1. Preparation of spawn, compost, spawning, casing, harvesting and postharvest handling of edible mushroom
2. Identification of various pathogens
3. Competitors of various mushrooms.

Suggested Readings

1. Chadha KL & Sharma SR. 2001. Advances in Horticulture (Mushroom). Vol. XIII. Malhotra Publ. House, New Delhi.
2. Chang ST & Hays WA. 1997. The Biology and Cultivation of Edible Mushrooms. Academic Press, New York.
3. Chang ST & Miles PG. 2002. Edible Mushrooms and their Cultivation. CRC Press, Florida.
4. Kapur JN. 1989. Mushroom Cultivation. DIPA, ICAR, New Delhi.
5. Dhar BL. 2005. Cultivation Technology of High Temperature Tolerant
6. White Button Mushroom. DIPA, ICAR, New Delhi.

2022

**COMPULSORY PAPER: ENTO-401: APICULTURE, SERICULTURE,
PISCICULTURE AND LAC CULTURE**

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in
theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Introduction to beneficial insects. Importance and History of apiculture. Species of honeybees, Rock bee, Little bee, Indian bee, European bee, Italian bee and Dammar bee
2. Lifecycle and caste determination. Bee colony maintenance, bee colony activities, starting of new colony, location site, transferring colony, replacement of queen, combining colonies, swarm prevention, colony management in different seasons
3. Equipment for apiculture, types of beehives and their description. Bee pasturage. Honey extraction, honey composition and value, bee wax and tissues.
4. Lac growing areas in India, Lac insects, biology, behaviour, lac cultivation, food plants, pruning, inoculation, cropping, kinds of lac. Enemies of lac-insects.

Section B

5. Importance, history and development of sericulture in India, silkworms' kinds and their hosts, systematic position, distribution, lifecycles in brief, Silk glands.
6. Mulberry silkworm-morphological features, races, rearing house and equipments, disinfection and hygiene. Grainage acid treatment, packing and transportation of eggs, Incubation, black boxing, hatching of eggs. Silkworm rearing young age /chawki rearing and old age rearing of silkworms.
7. Feeding, spacing, environmental conditions and sanitation. Cocoon characters colour, shape, hardness and shell ratio. Defective cocoons and stifling of cocoons.
8. Uses of silk and by-products. Economics of silk production. Moriculture-Mulberry varieties, package of practices, Pests and diseases and their management. Fisheries resources of India, commercial important brackish water and freshwater fish and their production.

SEMESTER-VII
COMPULSORY PAPER: ENTO-401: APICULTURE, SERICULTURE,
PISCICULTURE AND LAC CULTURE

Practical

Maximum Marks: 40

Time: 3 hours

Pass Marks: 40%

Teaching hours: 4 hours per week

1. Honeybee colony, different beehives and apiculture equipment.
2. Summer and Winter management of colony.
3. Honey extraction and bottling.
4. Study of pests and diseases of honeybees. Establishment of mulberry garden.
5. Preparation of mulberry cuttings, planting methods under irrigated and rainfed conditions. Maintenance of mulberry garden-pruning, fertilization, irrigation and leaf harvest.
6. Mulberry pests and diseases and their management and nutritional disorders.
7. Study of different kinds of silkworms and mulberry silkworm morphology, silk glands. Sericulture equipments for silkworm rearing.
8. Mulberry silkworm rearing room requirements. Rearing of silkworms-chalky rearing.
9. Rearing of silkworms late age silkworm rearing and study of montages.
10. Study of silkworm pests, diseases and their management.
11. Lac insects-biology, behaviour, lac cultivation, food plants, pruning, inoculation, cropping, kinds of lac.
12. Enemies of lac insects.

Suggested Readings

1. Singh, S. 1975 Bee keeping in India – ICAR, New Delhi., 214p.
2. Sunita, N.D, Guleed, M.B, Mulla S.R and Jagginavar, 2003, Beekeeping, UAS Dharwad
3. Mishra, R.C. and Rajesh Gar. 2002. Prospective in Indian Apiculture. Agrobios, Jodhpur.
4. Singh, D and Singh, J.P. 2006. A hand book of Beekeeping, Agrobios (India).
5. Paul DeBach and David Rosen 1991. Biological control by natural enemies. Cambridge University Press
6. Tribhuvan Singh. Principles and Techniques of Silkworm Seed Production, Discovery Publishing House Pvt. Ltd
7. M.L. Narasiah. Problems and Prospects of Sericulture. Discovery Publishing House Pvt. Ltd.
8. Krishnaswamy, S. (Ed). 1978. Sericulture Manual - Silkworm Rearing. FAO Agri. Services bulletin, Rome.
9. Singh, S. 1975. Bee keeping in India. ICAR, New Delhi.
10. Jolly, M.S. 1987. "Appropriate sericulture techniques" International centre for training and Research in Tropical Sericulture, Mysore, 209.
11. K.P. Srivastava. A Text Book on Applied Entomology Vol. I & II. Kalyani Publishers. Ludhiana

3/11

SEMESTER-VII

COMPULSORY PAPER: ABM-401: AGRI-BUSINESS MANAGEMENT

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Transformation of agriculture into agribusiness, various stakeholders and components of agribusiness systems. Importance of agribusiness in the Indian economy and New Agricultural Policy.
2. Distinctive features of Agribusiness Management: Importance and needs of agro-based industries. Classification of industries and types of agro based industries.
3. Institutional arrangement, procedures to set up agro based industries. Constraints in establishing agro-based industries. Agri-value chain: Understanding primary and support activities and their linkages.
4. Business environment: PEST & SWOT analysis. Management functions: Roles & activities, Organization culture.

Section B

5. Planning, meaning, definition, types of plans. Purpose or mission, goals or objectives, Strategies, policies procedures, rules, programs and budget. Components of a business plan. Steps in planning and implementation.
6. Organization staffing, directing and motivation. Ordering, leading, supervision, communications, control.
7. Capital Management and Financial management of Agribusiness. Financial statements and their importance. Marketing Management: Segmentation, targeting & positioning. Marketing mix and marketing strategies. Consumer behavior analysis, Product Life Cycle (PLC).
8. Sales & Distribution Management. Pricing policy, various pricing methods. Project Management definition, project cycle, identification, formulation, appraisal, implementation, monitoring and evaluation. Project Appraisal and evaluation techniques.

COMPULSORY PAPER: ABM-401: AGRI BUSINESS MANAGEMENT

Practical

Maximum Marks: 40

Time: 3 hours

Pass Marks: 40%

Teaching hours: 4 hours per week

1. Study of agri-input markets: Seed, fertilizers, pesticides.
2. Study of output markets: grains, fruits, vegetables, flowers.
3. Study of product markets, retails trade commodity trading, and value-added products.
4. Study of financing institutions- Cooperative, Commercial banks, RRBs, Agribusiness Finance Limited, NABARD.
5. Preparations of projects and Feasibility reports for agribusiness entrepreneur.
6. Appraisal/evaluation techniques of identifying viable project- Non-discounting techniques.
7. Case study of agro-based industries.

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SEMESTER-VII

OPTION-I: AGRON-401: PRINCIPLE AND PRACTICES OF WEED MANAGEMENT

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Weed biology and ecology; crop-weed competition including allelopathy; weed indices
2. Principles and methods of weed control and classification; Herbicides introduction and history of their development; classification based on chemical, physiological application and selectivity
3. Herbicide structure-activity relationship; factors affecting the efficiency of herbicides; mode and mechanism of action of herbicides.
4. Herbicide formulations; herbicide mixtures; herbicide resistance and management

Section B

5. Weed control through bio-herbicides, myco-herbicides and allelo-chemicals.
6. Degradation of herbicides in soil and plants; herbicide resistance in weeds and crops; herbicide rotation.
7. Weed management in major crops and cropping systems; parasitic weeds; weed shifts in cropping systems; aquatic and perennial weed control.
8. Integrated weed management; cost: benefit analysis of weed management.

OPTION-I: AGRON-401: PRINCIPLE AND PRACTICES OF WEED MANAGEMENT

Practical

Maximum Marks: 40

Time: 3 hours

Pass Marks: 40%

Teaching hours: 4 hours per week

1. Identification of important weeds of different crops
2. Preparation of a weed herbarium.
3. Weed survey in crops and cropping systems
4. Crop-weed competition studies
5. Preparation of spray solutions of herbicides for high and low-volume sprayers
6. Use of various types of spray pumps and nozzles and calculation of swath width
7. Economics of weed control
8. Herbicide resistance analysis in plant and soil
9. Bioassay of herbicide resistance
10. Calculation of herbicidal requirement

Suggested Readings

1. Aldrich RJ & Kramer RJ. 1997. Principles in Weed Management. Panima Publications.
2. Ashton FM & Crafts AS. 1981. Mode of Action of Herbicides. 2nd Ed. Wiley Inter-Science.
3. Gupta OP. 2007. Weed Management – Principles and Practices. Agrobios.
4. Mandal RC. 1990. Weed, Weedicides and Weed Control - Principles and Practices. Agro-Botanical Publ.
5. Rao VS. 2000. Principles of Weed Science. Oxford & IBH.
6. Subramanian S, Ali AM & Kumar RJ. 1997. All About Weed Control. Kalyani.
7. Zimdahl RL. 1999. Fundamentals of Weed Science. 2nd Ed. Academic Press.

5/14

OPTION-I: AGRON-402: FARMING SYSTEMS AND SUSTAINABLE AGRICULTURE

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Sustainable agriculture- definition, concept, goals, Factors affecting ecological balance- land degradation, water and air pollution, global warming, impact and amelioration;
2. Sustainable agriculture practices-natural farming, alternative farming, integrated farming, HEISA, LEISA and BIOFARMS.
3. Farming systems- principles, concepts, components; cropping systems; sequential cropping, crop rotation, relay and ratoon cropping, multistorey cropping, filler and inter planting in orchards; Assessment of multiple cropping advantages
4. Delineation of efficient cropping zones based on RYI and RSI and strategies for improving crop productivity in different zones; IFS models for dry, wet, wastelands and for different agro climatic situations.

Section B

5. Organic farming-concept, definition, principles, components, scope, relevance in the present context; organic production requirement, permitted and restricted inputs in organic farming
6. Biological intensive nutrient management, traditional and non-traditional additives in organic farming; Weeds, pests and diseases management practices in organic farming
7. Quality considerations, certification, accreditation, labeling, marketing and exports. Definition of precision agriculture scope and concept of precision agriculture, components of precision agriculture.
8. Site Specific Nutrient Management (SSM) for nutrient and irrigation management practices. Comparative yield, quality and farm profits under SSM practices V/s Uniform Rate Technology (URT) practices.

SEMESTER-VII
OPTION-I: ACRON-402: FARMING SYSTEMS AND SUSTAINABLE
AGRICULTURE

Maximum Marks: 40	Practical	Time: 3 hours
Pass Marks: 40%		Teaching hours: 4 hours per week

1. Assessment of multiple cropping advantages and sustainability
2. Preparation of cropping schemes for rainfed situations,
3. Preparation of cropping schemes for irrigated situations
4. Preparation of IFS models for rainfed and irrigated lands
5. Preparation of IFS models for wet and wastelands
6. Recycling of crop residues in agriculture
7. Preparation of enriched compost and vermicompost
8. Resource allocation and management of dairy, poultry, piggy, sericulture as a component of IFS.
9. Labour resource management, labour saving techniques Farm records and farm book keeping.
10. Preparation and use of botanicals in organic farming
11. Processing, certification and accreditation in organic farming.

Suggested Reading

1. A.K.Dahama. 2007. Organic farming for sustainable agriculture. Agrobios (India), Jodhpur.
2. Arun. K. Sharma. 2011. Handbook of Organic farming. Agrobios (India), Jodhpur.
3. A.C.Gaur. Handbook of Organic farming and biofertilizers.
4. S.P. Palaniappan and K. Annadurai. 2010. Organic farming – Theory and Practice. Scientific Publishers. Jodhpur.
5. U.Thapa and P. Tripathy. Organic farming in India- Problems and Prospects.
6. G.K.Veeresh. 2006. Organic farming. Foundation Books. New Delhi.

JS

**OPTION-I: AGRON-403: RAINFED FARMING AND WATERSHED
MANAGEMENT**

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in
theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Definition, concept and characteristics of dry land farming; dry land versus rainfed farming; significance and dimensions of dry land farming in Indian agriculture.
2. Soil and climatic parameters with special emphasis on rainfall characteristics; constraints limiting crop production in dry land areas;
3. Types of drought, characterization of environment for water availability; crop planning for erratic and aberrant weather conditions.
4. Stress physiology and resistance to drought, adaptation of crop plants to drought, drought management strategies; preparation of appropriate crop plans for dry land areas; mid contingent plan for aberrant weather conditions.

Section B

5. Tillage, till, frequency and depth of cultivation, compaction in soil tillage; concept of conservation tillage; tillage in relation to weed control and moisture conservation
6. Techniques and practices of soil moisture conservation (use of mulches, kinds, effectiveness and economics); anti-transpirants
7. Soil and crop management techniques, seeding and efficient fertilizer use.
8. Concept of watershed resource management, problems, approach and components.

SP

**OPTION-I: AGRON-403: RAINFED FARMING AND WATERSHED
MANAGEMENT**

Practical

Maximum Marks: 40

Time: 3 hours

Pass Marks: 40%

Teaching hours: 4 hours per week

1. Seed treatment, seed germination and crop establishment in relation to soil moisture contents.
2. Moisture stress effects and recovery behaviour of important crops.
3. Estimation of moisture index and acidity index.
4. Spray of anti-transpirants and their effect on crops.
5. Collection and interpretation of data for water balance equations.
6. Calculation of Water use efficiency.
7. Preparation of crop plans for different drought conditions.
8. Study of field experiments relevant to dryland farming.
9. Visit to dryland research stations and watershed projects.

Suggested Reading

1. Das NR. 2007. Tillage and Crop Production. Scientific Publishers.
2. Dhople AM. 2002. Agrotechnology for Dryland Farming. Scientific Pubi.
3. Dhruv Narayan VV. 2002. Soil and Water Conservation Research in India. ICAR.
4. Gupta US. (Ed.). 1995. Production and Improvements of Crops for Drylands. Oxford & IBH.
5. Katyal JC & Farrington J. 1995. Research for Rainfed Farming. CRIDA.
6. Rao SC & Ryan J. 2007. Challenges and Strategies of Dryland Agriculture. Scientific Publishers.
7. Singh P & Maliwal PL. 2005. Technologies for Food Security and Sustainable Agriculture. Agrotech Publishing Company.
8. Singh RP. 1988. Improved Agronomic Practices for Dryland Crops. CRIDA.
9. Singh RP. 2005. Sustainable Development of Dryland Agriculture in India. Scientific Publishers.
10. Singh SD. 1998. Arid Land Irrigation and Ecological Management. Scientific Publishers.
11. Venkateshwarlu J. 2004. Rainfed Agriculture in India. Research and Development Scenario. ICAR, New Delhi.

SD

SEMESTER-VII

OPTION-I: AGRON-404: MODERN CONCEPTS IN CROP PRODUCTION

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs.

Pass marks: 40% separately in theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Crop growth analysis in relation to environment; agro-ecological zones of India. Quantitative agro-biological principles and inverse yield nitrogen law; Mitscherlich yield equation, its interpretation and applicability; Baule unit.
2. Effect of lodging in cereals; physiology of grain yield in cereals; optimization of plant population and planting geometry in relation to different resources; concept of ideal plant type and crop modelling for desired crop yield.
3. Scientific principles of crop production; crop response production functions; concept of soil plant relations; yield and environmental stress.
4. Integrated farming systems, organic farming, and resource conservation technology including modern concept of tillage; dry farming; determining the nutrient needs for yield potentiality of crop plants; concept of balance nutrition and integrated nutrient management; precision agriculture.

Section B

5. The concept of Information Technology (IT) and its application potential. Role of IT in natural resources management. Existing system of information generation and organizations involved in the field of land and water management.
6. Application and production of multimedia. Internet application tools and web technology. Networking system of information. Problems and prospects of new information and communication technology. Development of database concept for effective natural resources management.
7. Application of remote sensing, geographic information system (GIS) and GPS. Rational data base management system. Object oriented approaches. Information system, decision support systems and expert systems. Agricultural information management systems - use of mathematical models and programmes.
8. Application of decision support systems, multi sensor data loggers and overview of software packages in natural resource management. Video-conferencing of scientific information.

OPTION-I: AGRON-404: MODERN CONCEPTS IN CROP PRODUCTION

Practical	
Maximum Marks: 40	Time: 3 hours
Pass Marks: 40%	Teaching hours: 4 hours per week

1. Internet applications: E-mail, voice mail, web tools and technologies.
2. Handling and maintenance of new information technologies and exploiting their potentials.
3. Exercises on database management using database and spreadsheet programmes.
4. Usage of remote sensing, GIS and GPS survey in information generation and processing.
5. Exercises on running computer software packages dealing with water balance, crop production, land development, land and water allocation, watershed analysis etc.
6. Exercises on simple decision support and expert systems for management of natural resources.
7. Multimedia production using different softwares.
8. Exercises on development of information system on selected theme(s).
9. Video-conferencing of scientific information.

Suggested Readings

1. Balasubramanyam P & Palaniappan SP. 2001. Principles and Practices of Agronomy. Agrobios.
2. Fageria NK. 1992. Maximizing Crop Yields. Marcel Dekker.
3. Havlin JL, Beaton JD, Tisdale SL & Nelson WL. 2006. Soil Fertility and Fertilizers. 7th Ed. Prentice Hall.
4. Paroda R.S. 2003. Sustaining our Food Security. Konark Publications.
5. Reddy SR. 2000. Principles of Crop Production. Kalyani Publications.
6. Sankaran S & Mudaliar TV. 1997. Principles of Agronomy. The Bangalore Printing & Publishers.
7. Singh SS. 2006. Principles and Practices of Agronomy. Kalyani Publishers.

**OPTION-I: AGRON-405: PRINCIPLES AND PRACTICES OF WATER
MANAGEMENT**

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in
theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Water and its role in plants; water resources of India; major irrigation projects, extent of area and crops irrigated in India and different states.
2. Soil water movement in soil and plants; transpiration; soil-water-plant relationships; water absorption by plants
3. Plant response to water stress, crop plant adaptation to moisture stress condition.
4. Soil, plant and meteorological factors determining water needs of crops

Section B

5. Scheduling, depth and methods of irrigation; micro-irrigation system; fertigation; management of water in controlled environments and polyhouses.
6. Water management of the crops and cropping systems; quality of irrigation water and management of saline water for irrigation; water use efficiency.
7. Excess of soil water and plant growth; water management in problem soils
8. Drainage requirement of crops and methods of field drainage, their layout and spacing.

2/1

**OPTION-I: AGRON-405: PRINCIPLES AND PRACTICES OF WATER
MANAGEMENT**

Maximum Marks: 40	Practical	Time: 3 hours
Pass Marks: 40%		Teaching hours: 4 hours per week

1. Measurement of soil water potential by using tensiometer, and pressure plate and membrane apparatus.
2. Soil-moisture characteristics curves.
3. Water flow measurements using different devices.
4. Determination of irrigation requirements.
5. Calculation of irrigation efficiency.
6. Determination of infiltration rate.
7. Determination of saturated/unsaturated hydraulic conductivity.

Suggested Readings

1. Lenka D. 1999. Irrigation and Drainage. Kalyani
2. Michael AM. 1978. Irrigation: Theory and Practice. Vikas Publishers.
3. Paliwal KV. 1972. Irrigation with Saline Water. IARI Monograph, New Delhi.
4. Panda SC. 2003. Principles and Practices of Water Management. Agrobios.
5. Prihar SS & Sandhu BS. 1987. Irrigation of Food Crops - Principles and Practices. ICAR.
6. Reddy SR. 2000. Principles of Crop Production. Kalyani Publishers.
7. Singh Pratap & Maliwal PL. 2005. Technologies for Food Security and Sustainable Agriculture. Agrotech Publishers.

SP

OPTION-II: HORT-401: NURSERY MANAGEMENT OF HORTICULTURAL CROPS

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Introduction and importance; Nursery management and mechanization; micro propagation of horticultural crops; Modern field preparation and planting methods
2. Protected cultivation: advantages, controlled conditions, method and techniques, Micro irrigation systems and its importance in nursery management; EC, pH-based fertilizer scheduling.
3. Propagation: Need and potentialities for plant multiplication. Sexual methods of propagation, advantages and disadvantages. Seed dormancy; types of dormancy (scarification & stratification) internal and external factors, nursery techniques nursery management, apomixes -- mono-embryony, polyembryony, chimera& bud sport.
4. Propagation Structures: Mist chamber, humidifiers, greenhouses, glasshouses, cold frames, hot beds, poly-houses, phytotrons nursery (tools and implements), use of growth regulators in seed, types and stages of seed germination with examples.

Section B

5. Vegetative propagation, methods and techniques of division-stolon, pseudobulbs, offsets, runners, cutting, layering, grafting, formation of graft union, factor affecting, healing of graftage and budding
6. Physiological & bio chemical basis of rooting, factors influencing rooting of cuttings and layering, graft incompatibility.
7. Anatomical studies of bud union, selection and maintenance of mother trees, collection of scion wood stick, scion-stock relationship, and their influences, bud wood certification, techniques of propagation through specialized organs, corm, runners, suckers.
8. Micrografting, meristem culture, callus culture, anther culture, organogenesis, somaclonal variation hardening of plants in nurseries. Nursery registration act. Insect pest/disease control in nursery, Cost of establishment of propagation structures.

OPTION-II: HORT-401: NURSERY MANAGEMENT OF HORTICULTURAL CROPS

Maximum Marks: 40	Practical	Time: 3 hours
Pass Marks: 40%		Teaching hours: 4 hours per week

1. Methods propagation of plants in nursery beds, potting and repotting.
2. Preparation of nursery beds and sowing of seeds.
3. Raising of rootstock.
4. Seed treatments for breaking dormancy and inducing vigorous seedling growth.
5. Preparation of plant material for potting.
6. Hardening plants in the nursery.
7. Practicing different types of cuttings, layering, grafting and buddings including opacity and grafting, top grafting and bridge grafting etc.
8. Use of mist chamber in propagation and hardening of plants.
9. Preparation of plant growth regulators for seed germination and vegetative propagation.
10. Visit to a tissue culture laboratory.
11. Digging, labelling and packing of nursery fruit plants.
12. Maintenance of nursery records.
13. Use of different types of nursery tools and implements for general nursery and virus tested plant material in the nursery.
14. Cost of establishment of a mist chamber, greenhouse, glasshouse, polyhouse and their maintenance.
15. Nutrient and plant protection applications during nursery.

Suggested Readings

1. Guy W. Adriance and Fred R. Brison. Propagation of Horticultural Plants. Axis Books (India).
2. S. Rajan and B. L. Markose (series editor Prof. K.V. Peter). Propagation of Horticultural Crops- Horticulture Science Series vol.6, New India Publishing Agency, Pitam Pura, New Delhi-110088.
3. Sadhu, M.K. 1996. Plant Propagation. New age International Publishers, New Delhi.
4. Mukherjee, S.K. and Majumdar, P.K. 1973. Propagation of fruit crops. ICAR, New Delhi.
5. Sarma, R.R. 2002. Propagation of Horticultural Crops. Kalyani Publishers, (Principles and practices) New Delhi.
6. Symmonds, 1996. Banana. II edition Longman, London.
7. Chundawat, B.S. 1990. Arid fruit culture. Oxford and IBH, New Delhi.
8. Chadha, K.L. (ICAR) 2002. Hand book of Horticulture. ICAR, New Delhi.

OPTION-II: HORT-402: COMMERCIAL FRUIT PRODUCTION

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in
theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Horticultural classification of fruits including genome classification. Horticultural zones of India, detailed study of area, production and export potential, varieties, climate and soil requirements, propagation techniques, planting density and systems, after care, training and pruning.
2. Management of water, nutrient and weeds, special horticultural techniques including plant growth regulators, their solution preparation and use in commercial orchards. Physiological disorders.
3. Post-harvest technology, harvest indices, harvesting methods, grading, packaging and storage of the Mango, banana, grapes, citrus, papaya, sapota, guava, pomegranate, bael, ber, amla, anona, fig, pineapple and jackfruit.
4. Bearing in mango and citrus, causes and control measures of special production problems, alternate and irregular bearing overcome, control measures. Seediness and kokkan disease in banana, citrus decline and casual factors and their management. Bud forecasting in grapes, sex expression and seed production in papaya, latex extraction and crude papain production, economic of production.

Section B

5. Commercial varieties of regional, national and international importance.
6. Eco-physiological requirements, recent trends in propagation, rootstock influence, planting systems, cropping systems, root zone and canopy management.
7. Nutrient management, water management, fertigation, bioregulation, abiotic factors limiting fruit production, physiology of flowering, fruit set and development, abiotic factors limiting production, physiological disorders-causes and remedies, quality improvement by management practices;
8. Maturity indices, harvesting, grading, packing, precooling, storage, transportation and ripening techniques; industrial and export potential, Agri Export Zones(AEZ) and industrial support in Apple, pear, Plums, peach, apricot, cherries, Litchi, loquat, persimmon, kiwifruit, strawberry, walnut, almond, pistachio, pecan, mangosteen, carambola, fig and jammun

OPTION-II: HORT-402: COMMERCIAL FRUIT PRODUCTION

	Practical	
Maximum Marks: 40		Time: 3 hours
Pass Marks: 40%		Teaching hours: 4 hours per week

1. Identification of important cultivars,
2. Observations on growth and development, practices in growth regulation, malady diagnosis,
3. Analyses of quality attributes,
4. Visit to tropical, subtropical, humid tropical and temperate orchards,
5. Project preparation for establishing commercial orchards.

Suggested Readings

1. Bose TK, Mitra SK & Sanyal D. (Ed.) 2002. *Fruits of India – Tropical and Sub-tropical*. 3rd Ed. Vols. I, II. Naya Udyog.
2. Chadha KL & Pareek OP. 1996. (Eds.). *Advances in Horticulture*. Vol. I. Malhotra Publ. House.
3. Chadha KL & Shukhramany SD. 1999. *The Grape: Improvement, Production and Post-Harvest Management*. Malhotra Publ. House.
4. Janick J & Moore JN. 1996. *Fruit Breeding*. Vols.I-III. John Wiley & Sons.
5. Nijjar GS. 1977. (Eds.). *Fruit Breeding in India*. Oxford & IBH.
6. Radha T & Mathew L. 2007. *Fruit Crops*. New India Publ. Agency.
7. Singh S, Shivankar VJ, Srivastava AK & Singh IP. (Eds.). 2004. *Advances in Citriculture*. Jagminder Book Agency.

JS

SEMESTER-VII

OPTION-II: HORT-403: COMMERCIAL VEGETABLE PRODUCTION

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Introduction, botany and taxonomy, climatic and soil requirements,
2. Commercial varieties/hybrids, sowing/planting times and methods, seed rate and seed treatment,
3. Nutritional and irrigation requirements, intercultural operations, weed control, mulching, physiological disorders,
4. Harvesting, post-harvest management, plant protection measures and seed production of: Potato, Cole crops: cabbage, cauliflower, knoll kohl, sprouting broccoli, Brussels sprout, Root crops: carrot, radish, turnip and beetroot, Bulb crops: onion and garlic, Peas and broad bean, green leafy cool season vegetables

Section B

5. Area, production, economic importance and export potential of tropical and sub-tropical vegetable crops. Description of varieties and hybrid
6. Climate and soil requirements, seed rate, preparation of field, nursery practices; transplanting of vegetable crops and planting for directly sown/transplanted vegetable crops.
7. Spacing, planting systems, water and weed management; nutrient management and deficiencies; use of chemicals and growth regulators.
8. Cropping systems, harvest, yield, post-harvest handling, economics and marketing of vegetable crops such as Tomato, eggplant, hot and sweet peppers, Okra, beans, cowpea and cluster bean, Cucurbitaceous crops, Tapioca and sweet potato, Green leafy warm season vegetables, moringa, curry leaf, portulaca, basella, sorrel and roselle.

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2022-23, 2023-24, 2024-25
SEMESTER VII

OPTION-II: HORT-403: COMMERCIAL VEGETABLE PRODUCTION

Practical

Maximum Marks: 40
Pass Marks: 40%

Time: 3 hours
Teaching hours: 4 hours per week

1. Cultural operations (fertilizer application, sowing, mulching, irrigation, weed control) of winter vegetable crops and their economics
2. Experiments to demonstrate the role of mineral elements, plant growth substances and herbicides
3. Study of physiological disorders;
4. Preparation of cropping scheme for commercial farms
5. Visit to commercial greenhouse/ polyhouse.
6. Identification and description of vegetable crops
7. Nursery practices and transplanting, preparation of field and sowing/planting for direct sown and planted vegetable crops.
8. Herbicide use in vegetable culture
9. Top dressing of fertilizers and intercultural;
10. Use of growth regulators;
11. Identification of nutrient deficiencies, Physiological disorders.
12. Harvest indices and maturity standards,
13. Post-harvest handling and storage, marketing, seed extraction (cost of cultivation for tropical and sub-tropical vegetable crops),
14. Project preparation for commercial cultivation.

Suggested readings:

1. S. Thanburaj 2014 Textbook of vegetable, tuber crops and Spices, ICAR, New Delhi
2. B.R.Choudhary, 2009 A Text book on production technology of vegetables. Kalyani Publishers. Ludhiana.
3. T.K.Bose, 2002. Vegetable Crops. Nayaprakash. Kolkata
4. P.Hazra, 2011. Modern Technology in Vegetable Production. New India Publishing Agency. New Delhi.
5. T.R.Gopal Krishnan, 2007. Vegetable Crops. New India Publishing Agency. New Delhi.
6. K.V.Kamath, 2007. Vegetable Crop Production. Oxford Book Company, Jaipur
7. M.S.Dhalwal, 2008. Handbook of Vegetable Crops. Kalyani Publishers. Ludhiana
8. Singh, Umashankar, 2008. Indian Vegetables. Annol Publications. Pvt.Ltd .New Delhi.
9. K S Yawalkar, 2008. Vegetable crops in India. Agri-Horticultural Pub. House. Nagpur. 2004
10. M.K.Rana, 2008. Olericulture in India. Kalyani Publishers. Ludhiana
11. P.Hazra, 2006. Vegetable science. Kalyani Publishers. Ludhiana
12. Pratibha Sharma, 2007. Vegetables : Disease Diagnosis and Biomanagement. Avishkar Publishers. Jaipur
13. Uma Shankar, 2008. Vegetable Pest Management Guide for Farmers. International Book Distribution Co. Publication. Lucknow.
14. Singh, D.K., 2007. Modern Vegetable varieties and production. IBN publishers, Technology International Book Distributing Co. Lucknow.

OPTION-II: HORT-404: COMMERCIAL FLORICULTURE AND LANDSCAPE

ARCHITECTURE

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. History, definitions, scope of ornamental horticulture, aesthetic values
2. Floriculture industry, Importance, area and production, industrial importance of ornamental plants and flowers.
3. Importance, classification, design values and general cultivation aspects for ornamental plants viz. Annuals, biennales herbaceous perennials, grasses and bulbous ornamentals, shrubs, climbers, trees, indoor plants, palms and cycads, ferns and *Selaginella*, cacti and succulents
4. Importance, design and establishment of garden features/components viz. hedge, edge, borders, flower beds, bridges, paths, drives, fences, garden walls, gates, carpet bed, arbour, Patio, decking, retaining walls

Section B

5. Importance, design and establishment of garden features/components of shade garden, sunken garden, roof garden, terrace garden, pebble garden, rockery, pools, waterfalls, fountains, bog garden, avenue planting and children garden.
6. Lawn types, establishment and maintenance. Importance of Garden adornments viz. floral clock, bird bath, statues, sculptures, lanterns, water basins, garden benches etc.
7. Importance of flower arrangement, Ikebana, techniques, types, suitable flowers and cut foliage, uses of vertical garden, bottle garden, terrariums.
8. Art of making bonsai, culture of bonsai and maintenance.

5/24

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SEMESTER-VII

**OPTION-II: HORT-404: COMMERCIAL FLORICULTURE AND LANDSCAPE
ARCHITECTURE**

Maximum Marks: 40	Practical	Time: 3 hours
Pass Marks: 40%		Teaching hours: 4 hours per week

1. Identification and description of annuals, biennials, herbaceous perennials, climbers, shrubs, trees, indoor plants, ferns and *Selaginella*, Palms and cycads and cacti and succulents.
2. Planning and designing and establishment of garden features viz. lawn, hedge and edge, rockery, water garden, carpet bedding, shade garden, roof garden
3. Study and creation of terrariums, vertical garden
4. Study and practice of different types of flower arrangements, preparation of floral bouquets, preparation of floral rangoli, veni etc.
5. Study of Bonsai techniques, Bonsai practicing and training, Visit to nurseries and floriculture units.

Suggested Readings:

1. Bose, Chawdhary and Sharma. 1991. Tropical Garden Plants in colour. Horticulture and allied publishers, 3D Madhab Chatterjee street Kolkata.
2. K.V.Peter. 2009. Ornamental plants. New India publishing agency, Pitampura, New Delhi.
3. Richard Bird. 2002. Flowering trees and shrubs. Printed in Singapore by Star Standard Industries pvt. Ltd.
4. Bimaldas Chowdhury and Balai Lal Jana 2014. Flowering Garden trees. Pointer publishers, Jaipur. India.
5. Arora, J.S. 2006. Introductory Ornamental Horticulture. Kalyani Publishers, Ludhiana
6. Randhawa, G.S. Anilabha Mukhopadhyay, 2004. Floriculture in India. Allied Publishers Pvt. Ltd., New Delhi.
7. Bose, T.K. Mukherjee, D. 2004. Gardening in India. Oxford & IBH Publishers.
8. Chadha, K.L. and Chaudhary, B. 1986. Ornamental Horticulture in India. Publication and Information division, ICAR, New Delhi.

Signature

SEMESTER-VII

OPTION-II: HORT-405: SEED PRODUCTION OF HORTICULTURAL CROPS

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in theory and practical

Teaching hours: 4 per week

**THEORY
INSTRUCTIONS FOR THE PAPER-SETTER**

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Introduction and history of seed industry in India. Definition of seed and its quality, classes-types of seed. Differences between grain and seed, new seed policies DUS test, scope of vegetable seed industry in India.
2. Genetical and agronomical principles of seed production; methods of seed production; use of growth regulators and chemicals in vegetable seed production
3. Floral biology, pollination, breeding behaviour, seed development and maturation; methods of hybrid seed production. Categories of seed, maintenance of nucleus, foundation and certified seed; seed certification, seed standards; seed act and law enforcement, plant quarantine and quality control.
4. Physiological maturity, seed harvesting, extraction, curing, drying, grading, seed processing, seed coating and pelleting, packaging (containers/packets), storage and cryopreservation of seeds, synthetic seed technology.

Section B

5. Principles of vegetable seed production. Role of temperature, humidity and light in vegetable seed production
6. Land requirements, climate, season, planting time, nursery management, seed rate, rouging, seed extraction and storage of cole crops, root vegetables, solanaceous vegetables, cucurbits, okra, leafy vegetables, bulb crops, leguminous vegetables and exotic vegetables, vegetatively propagated vegetables.
7. Production of hybrid and open pollinated seeds in Flower crops viz Chrysanthemum, Dahlia, Gaillardia, Petunia, Zinnia, Cosmos, Dianthus, Snapdragon, Pansy, marigold, antirrhinum and china aster.
8. Harvesting processing and storage of seeds, seed certification. Seed germination and purity analysis. Field and seed standards. Seed drying and extraction. Seed legislation.

OPTION-II: HORT-405: SEED PRODUCTION OF HORTICULTURAL CROPS

Practical

Maximum Marks: 40
Pass Marks: 40%

Time: 3 hours
Teaching hours: 4 hours per week

1. Study of seed structure, colour size, shape and texture.
2. Field inspection of seed crops.
3. Practices in rouging, Harvesting and seed extraction.
4. Seed germination and purity analysis.
5. Methods of seed production, Seed certification in cole crops, root vegetables, bulb crops, solanaceous vegetables, cucurbits, okra, leafy vegetables, leguminous vegetables and exotic vegetables.
6. Study of floral biology and pollination in important species and cultivars.
7. Techniques of inducing polyploidy and mutation.
8. Production of pure and hybrid seeds.
9. Harvesting, conditioning and testing of seeds.
10. Practice in seed production methods, Seed processing machines.
11. Visit to seed production units.

Suggested Readings:

1. G.N. Kulkarni 2002 Principles of Seed Technology. Kalyani Publishers, Ludhiana.
2. L.O. Copeland. 1999. Principles of Seed Science and Technology. Springer Publications.
3. P. Hazra and M.G. Som, 2009. Vegetable seed production and Hybrid Technology. Kalyani Publishers, Ludhiana.
4. Agarwal, P. K. 2010. Techniques in Seed Science and Technology. South Asian Publishers. New Delhi.
5. Arya, Prem Singh. 2003. Vegetable seed Production Principles. Kalyani Publishers, Ludhiana.
6. Fageria, M. S. 2011. Vegetable Crops- Breeding and Seed Production. Kalyani Publishers, Ludhiana.
7. Singh, S.P. 2001. Seed Production in Commercial Vegetables. Agrotech Publishing Academy, Udaipur.
8. Vanangamudi, K.2010. Vegetable Hybrid Seed Production and Management. Agrobios, Jodhpur.
9. Singh, Prabhakar. 2015. Seed Production Technology of vegetable. Daya Publishing House. New Delhi.
10. Raymond A.T., 2000. Vegetable Seed Production. Oxford University Press, USA
11. Prem Singh Arya. 2003. Vegetable breeding, production and seed production. Kalyani publishers, New Delhi.
12. Singh, S.P. 2001. Seed production of commercial vegetables. Agrotech Publishing, Udaipur
13. Nemgal Singh, P.K. Singh, Y.K. Singh and Virendra kumar, 2006. Vegetable Seed Production Technology. International book distributing co., Lucknow.

SEMESTER-VII

OPTION-III: GPB-401: PRINCIPLE OF CYTOGENETICS

Max Marks: 100	Duration of the paper: 3 hrs
Theory : 45 marks	Pass marks: 40% separately in theory and practical
Internal Assessment: 15 marks	Teaching hours: 4 per week
Practical: 40 marks	

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Karyotype analysis, banding pattern, karyotype evolution, special types of chromosomes: B-chromosomes, polytene chromosomes, lamp-brush chromosomes, sex-chromosomes.
2. Structural alterations in chromosomes, origin, meiosis and breeding behaviour, duplications, deficiencies, inversions and translocation heterozygotes, Robertsonian translocations, B-A Translocations, Translocation tester sets.
3. Haploids: Origin, production, meiotic behaviour, detection, role in cytogenetics and plant breeding.
4. Polyploidy: Origin, production, meiosis in auto-polyploids, chromosome and chromatid segregation, Allopolyploids: types, genome constitution and analysis, evolution of major crop plants.

Section B

5. Trisomics and Monosomics: induction, characterization, transmission and their role in chromosome mapping in diploids and polyploids.
6. Alien gene transfer through chromosome manipulations with special reference to wheat, transfer of whole genome, transfer of individual chromosome and chromosome segments, production, characterization and utility of alien addition and substitution lines.
7. Population genetics: gene pool and gene frequencies, equilibrium of gene frequencies, change in gene frequencies by mutation, selection, migration and random drift.
8. Brief ideas of genetics of inbreeding depression, heterosis, multigen families.

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SEMESTER-VII

OPTON-III: GPB-401: PRINCIPLE OF CYTOGENETICS

Practical

Maximum Marks: 40

Time: 3 hours

Pass Marks: 40%

Teaching hours: 4 hours per week

1. Study of fixatives and stains.
2. Squash and smear techniques.
3. Demonstrations of permanent slides and cell division
4. Pollen fertility and viability
5. Solving problems of monohybrid, dihybrid, and test cross ratios using chi-square test
6. Gene interactions, estimation of linkages using three point test cross from F₂ data and construction of linkage maps.
7. Genetics variation in pea.

Suggested readings:

1. Gardner, E J, Simmans, M J & Snustad D P. Principles of Genetics (VIII Edn). John Wiley & Sons. New York.
2. William D. Stansfield. Theory and Problems of Genetics. Schaum's Outline series - McGraw-Hill Inc.
3. Benjamin Lewin. Genes XII. John Wiley & Sons, New York.
4. Phundan Singh. Elements of Genetics. Kalyani publishers, New Delhi.
5. Norman V. Rothwell. Understanding Genetics (IV Ed.). Oxford University Press, Oxford.
6. Simut, Dunn & Dobzhansky. Principles of Genetics XIX reprint. Tata McGraw-Hill Publishing Co. Ltd, New Delhi.
7. Loewy & Sikevitz. Cell Structure & Function (II Ed.). Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.
8. Stent & Calendar. Molecular Genetics (II Ed.). CBS Publishers, New Delhi
9. Singh B D. Fundamentals of Genetics. Kalyani Publishers, New Delhi
10. Srivastava & Tyagi. Selected Problems in Genetics (Vol.1-3). Anmol Publications Pvt. Ltd., New Delhi
11. Khanna VK. Genetics-Numerical Problems. Kalyani Publishers, New Delhi.
12. Farook& Khan. Genetics & Cytogenetics (I Ed.). Premier Publishing House, Hyderabad.
13. Shukla. Cell Biology (2001). Dominant publishers, New Delhi
14. George Acquaah. Principles of Plant Genetics and Breeding. Blackwell
15. B.D. Singh. Fundamental of Genetics. Kalyani. India
16. Gupta, P.K. 1985. Cytology, genetics and cytogenetics. Rastogi Publication, India

OPTION-III: GPB-402: PLANT GENETIC RESOURCES AND CROP EVOLUTION

Max Marks: 100

Duration of the paper: 3 hrs

Theory : 75 marks

Pass marks: 40%

Internal Assessment: 25 marks

Teaching hours: 5 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 11 marks while each question from Section B will carry 11½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 15 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Historical perspectives and need for PGR conservation; Importance of plant genetic resources; Taxonomical classification of cultivated plants; Gene pool: primary, secondary and tertiary centres of origin and global pattern of diversity; Basic genetic resources and transgenes.
2. Principles, strategies and practices of exploration, collection, characterization, evaluation and cataloguing of PGR; Plant quarantine and phyto-sanitary certification. Germplasm introduction and exchange; Principles of in vitro and cryopreservation. Germplasm conservation- in situ, ex situ, and on-farm; short, medium and long term conservation strategies for conservation of orthodox seed and vegetatively propagated crops;
3. Registration of plant genetic resources. PGR data base management; Multivariate and clustering analysis, descriptors; National and international protocols for PGR management; PGR for food and agriculture (PGRFA); PGR access and benefit sharing; Role of CGIAR system in the germplasm exchange; PBR.
4. Farmers rights and privileges: Seed Act, sui generis system; Geographical indicators, Intellectual property; Patents, copyrights, trademarks and trade secrets.

Section B

5. Journey from wild to domestication; Genetic enhancement- need for genetic enhancement; Genetic enhancement in pre-Mendelian era and 21st century; Genetic enhancement and plant breeding; Reasons for failure in genetic enhancement;
6. Sources of genes/ traits- novel genes for quality. Distant Hybridization: Inter-specific, inter-generic hybridization, scope and limitations, techniques to overcome the limitations
7. Gene transfer tools and techniques into cultivated species; Validation of transferred genes and their expression. Post-genomic tools for genetic enhancement of germplasm; Pre-breeding through chromosome manipulation;
8. Application of biotechnology for Genetic Enhancement-Achievements. Utilization of genetic resources, concept of core and mini-core collections, genetic enhancement/ Pre-breeding for crop improvement including hybrid development.

**OPTION-III: CPB-402: PLANT GENETIC RESOURCES AND CROP
EVOLUTION**

Suggested Readings

1. Gautam PL, Dass BS, Srivastava U & Duhoon SS. 1998. Plant Germplasm Collecting: Principles and Procedures. NBPGR, New Delhi.
2. Painting KA, Perry MC, Denning RA & Ayad WG. 1993. Guide Book for Genetic Resources Documentation. IPGRI, Rome, Italy.
3. Paroda RS & Arora RK. 1991. Plant Genetic Resources, Conservation and Management. Concepts and Approaches. IPGRI Regional office for South and South Asia, New Delhi.
4. Puzone L & Hazekamp TH. 1996. Characterization and Documentation of Genetic Resources Utilizing Multimedia Database: NBPGR, New Delhi.
5. Rana RS, Sapra RL, Agrawal RC & Gambhir R. 1991. Plant Genetic Resources, Documentation and Information Management. NBPGR, New Delhi.
6. Singh RJ & Jauhar PJ. 2005. Genetic Resources, Chromosomal Engineering and Crop Improvement. Vol. I. Grain Legumes, Vol. II. Cereals. CRC Press, Taylor & Francis Group, USA.

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OPTION-III: GPB-403: HETEROSIS BREEDING

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Historical aspect of heterosis - Nomenclature and definitions of heterosis - Heterosis in natural population and inbred population;
2. Evolutionary aspects - Genetic consequences of selfing and crossing in self- and cross-pollinated and asexually propagated crops crops. Pre Mendelian and Post-Mendelian ideas - Genetic theories of heterosis-Physiological, Biochemical and molecular factors underlining heterosis; theories and their estimation, - Evolutionary concepts of heterosis.
3. Prediction of heterosis from various crosses- Inbreeding depression, frequency of inbreeding and residual heterosis in F2 and segregating populations, importance of inbreeding in exploitation of heterosis - case studies. - Relationship between genetic distance and expression of heterosis-case studies;
4. Divergence and Genetic Distance analyses-morphological and molecular genetic distance in predicting heterosis, Development of heterotic pools in germplasm/genetic stocks and inbreds, their improvement for increasing heterosis. Types of male sterility and use in heterosis breeding; Maintenance, transfer and restoration of different types of male sterility

Section B

5. Use of self-incompatibility in development of hybrids; Hybrid seed production system; 3-line, 2-line and 1-line system; Development of inbreds and parental lines-A, B and R lines - functional male sterility; Commercial exploitation of heterosis- maintenance breeding of parental lines in hybrids.
6. Fixation of heterosis in self, cross and often cross pollinated crops, asexually/clonally propagated crops;
7. Male sterile line creation and diversification in self pollinated, cross pollinated and asexually propagated crops; problems and prospects; Apomixis in fixing heterosis-concept of single line hybrid.
8. Organellar heterosis and complementation - Creation of male sterility through genetic engineering and its exploitation in heterosis. Heterosis breeding in wheat, rice, cotton, maize, pearl millet, sorghum and oilseed crops.

OPTION-III: CPB-403: HETEROSIS BREEDING

Practical

Maximum Marks: 40

Time: 3 hours

Pass Marks: 40%

Teaching hours: 4 hours per week

1. Selection indices and selection differential – Calculations and interpretations - Male sterile line characterization in millets using morphological descriptors
2. Restorer line identification and diversification of male sterile sources - Male sterile line creation in dicots comprising oilseeds, pulses and cotton
3. Problems in creation of CGMS system; Ways of overcoming them - Male sterile line creation
4. Diversification and restoration in forage crops;
5. Understanding the difficulties in breeding apomicts;
6. Estimation of heterotic parameters in self, cross and asexually propagated crops
7. Estimation from the various models for heterosis parameters -Hybrid seed production in field crops – an account on the released hybrids; their potential

Suggested Readings

1. Proceedings of Genetics and Exploitation of Heterosis in Crops – An International Symposium CIMMYT, 1998.
2. Ben Hui Lin. 1998. Statistical Genomics – Linkage, Mapping and QTL Analysis. CRC Press.
3. De Jong G. 1988. Population Genetics and Evolution. Springer-Verlag.
4. Hart DL. 2000. A Primer of Population Genetics. 3rd Ed. Sinauer Assoc.
5. Mettler LE & Gregg TG. 1969. Population Genetics and Evolution. Prentice-Hall.
6. Montgomery DC. 2001. Design and Analysis of Experiments. 5th Ed., Wiley & Sons.
7. Richards AJ. 1986. Plant Breeding Systems. George Allen & Unwin.
8. Srivastava S & Tyagi R. 1997. Selected Problems in Genetics. Vols. I, II. Anmol Publ

SCV

OPTION-III: GPB-404: MUTAGENESIS AND MUTATION BREEDING

Max Marks: 100

Theory : 75 marks

Internal Assessment: 25 marks

Duration of the paper: 3 hrs

Pass marks: 40%

Teaching hours: 5 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 11 marks while each question from Section B will carry 11½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 15 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Mutation and its history-Nature and classification of mutations: spontaneous and induced mutations, micro and macro mutations, pre and post adaptive mutations-Detection of mutations in lower and higher organisms – paramutations.
2. Mutagenic agents: physical-Radiation types and sources: Ionising and non-ionizing radiations viz., X rays, γ rays, α and β particles, protons, neutrons and UV rays - Radiobiology: mechanism of action of various radiations (photoelectric absorption, Compton scattering and pair production) and their biological effects –RBE and LET relationships.
3. Chemical mutagens- Classification - Base analogues, acitibiotics, alkylating agents, acridine dyes and other mutagens: their properties and mode of action - Dose determination and factors influencing chemical mutagenesis -Treatment methods using physical and chemical mutagens – Combination treatments: Other causes of mutation - direct and indirect action, comparative evaluation of physical and chemical mutagens.
4. Effect of mutations on DNA - Repair mechanisms operating at DNA, chromosome, cell and organism level to counteract the mutation effects -Dosimetry - Objects and methods of treatment - Factors influencing mutation: dose rate, acute vs chronic irradiation, recurrent irradiation, enhancement of thermal neutron effects - Radiation sensitivity and modifying factors: External and internal sources- Oxygen, water content, temperature and nuclear volume.

Section B

5. Observing mutagen effects in M1 generation: plant injury, lethality, sterility, chimeras etc.,- Observing mutagen effects in M2 generation-estimation of mutagenic efficiency and effectiveness – spectrum of chlorophyll and viable mutations — Mutations in traits with continuous variation.
6. Factors influencing the mutant spectrum: genotype, type of mutagen and dose, pleiotropy and linkage etc. - Individual plant-based mutation analysis and working out effectiveness and efficiency in M3 generation-Comparative evaluation of physical and chemical mutagens for creation of variability in the same species – Case studies.
7. Use of mutagens in creating oligogenic and polygenic variations – Case studies - In vitro mutagenesis - callus and pollen irradiation; Handling of segregating generations and selection procedures: Validation of mutants;
8. Mutation breeding for various traits (disease resistance, insect resistance, quality improvement, etc) in different crops- Procedures for micromutations breeding/polygenic mutations- Achievements of mutation breeding- varieties released across the world- Problems associated with mutation breeding. Use of mutagens in genomics, allele mining.

OPTON-III: CPB-404: MUTAGENESIS AND MUTATION BREEDING

Suggested Readings

1. Alper T. 1979. Cellular Radiobiology. Cambridge Univ. Press, London.
2. Chadwick KH & Leenhouts HP. 1981. *The Molecular Theory of Radiation Biology*. Springer-Verlag.
3. Cotton RGH, Edkin E & Forrest S. 2000. *Mutation Detection: A Practical Approach*. Oxford Univ. Press.
4. International Atomic Energy Agency. 1970. *Manual on Mutation Breeding*. International Atomic Energy Agency, Vienna, Italy.
5. Singh BD. 2003. *Genetics*. Kalyani.
6. Strickberger MW. 2005. *Genetics*. 3rd Ed. Prentice Hall.

5/1

OPTION-III: CPB-405: BIOTECHNOLOGY FOR CROP IMPROVEMENT

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in
theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Biotechnology and its relevance in agriculture; Definitions, terminologies and scope in plant breeding.
2. Tissue culture- History, callus, suspension cultures, cloning; Regeneration; Somatic embryogenesis; Anther culture; somatic hybridization techniques; Meristem, ovary and embryo culture; cryopreservation.
3. Techniques of DNA isolation, quantification and analysis; Genotyping; Sequencing techniques; Vectors, vector preparation and cloning. Biochemical and Molecular markers: morphological, biochemical and DNA-based markers (RFLP, RAPD, AFLP, SSR, SNPs, ESTs etc.).
4. Mapping populations (F2s, back crosses, RILs, NILs and DH). Molecular mapping and tagging of agronomically important traits. Statistical tools in marker analysis, Robotics; Marker-assisted selection for qualitative and quantitative traits; QTLs analysis in crop plants; Gene pyramiding.

Section B

5. Marker assisted selection and molecular breeding; Genomics and genoinformatics for crop improvement; integrating functional genomics information on agronomically/economically important traits in plant breeding; Marker-assisted backcross breeding for rapid introgression, Generation of EDVs.
6. Recombinant DNA technology, transgenes, method of transformation, selectable markers and clean transformation techniques, vector-mediated gene transfer, physical methods of gene transfer. Production of transgenic plants in various field crops: cotton, wheat, maize, rice, soybean, oilseeds, sugarcane etc. Commercial releases.
7. Biotechnology applications in male sterility/hybrid breeding, molecular farming, MOs and related issues (risk and regulations);
8. GMO: International regulations, biosafety issues of GMOs; Regulatory procedures in major countries including India, ethical, legal and social issues; Intellectual property rights. Bioinformatics & Bioinformatics tools. Nanotechnology and its applications in crop improvement programmes.

2021

OPTION-III: GPB-405 : BIOTECHNOLOGY FOR CROP IMPROVEMENT

Practical

Maximum Marks: 40

Time: 3 hours

Pass Marks: 40%

Teaching hours: 4 hours per week

1. Requirements for plant tissue culture laboratory
2. Techniques in plant tissue culture - Media components and media preparation
3. Aseptic manipulation of various explants ; observations on the contaminants occurring in media – interpretations –
4. Inoculation of explants; Callus induction and plant regeneration
5. Standardizing the protocols for regeneration; Hardening of regenerated plants;
6. Establishing a greenhouse and hardening procedures
7. Visit to commercial micropropagation unit.
8. DNA isolation, DNA purity and quantification tests,
9. gel electrophoresis of proteins
10. PCR-based DNA markers, gel scoring and data analysis for tagging and phylogenetic relationship
11. Construction of genetic linkage maps using computer software.

Suggested Readings

1. Chopra VL & Nasim A. 1990. Genetic Engineering and Biotechnology: Concepts, Methods and Applications. Oxford & IBH.
2. Gupta PK. 1997. Elements of Biotechnology. Rastogi Publ.
3. Ilackett PB, Fuchs JA & Messing JW. 1988. An Introduction to Recombinant DNA Technology - Basic Experiments in Gene Manipulation. 2nd Ed. Benjamin Publ. Co.
4. Sambrook J & Russell D. 2001. Molecular Cloning - a Laboratory Manual. 3rd Ed. Cold Spring Harbor Lab. Press.
5. Singh BD. 2005. Biotechnology, Expanding Horizons. Kalyani.

Sd/-

**COMPULSORY PAPER: EXT-401: EXTENSION METHODOLOGY AND
COMMUNICATION SKILLS FOR TECHNOLOGY TRANSFER**

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in
theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Education: Meaning, definition & Types; Extension Education- meaning, definition, scope and process; objectives and principles of Extension Education
2. Extension Programme planning- Meaning, Process, Principles and Steps in Programme Development. Extension systems in India: extension efforts in pre-independence era (Sriniketan, Marthandam, Pirka Development Scheme, Gurgaon Experiment, etc.) and post-independence era (Etawah Pilot Project, Nilokheri Experiment, etc.); various extension/ agriculture development programmes launched by ICAR/ Govt. of India (IADP, IAAP, HYVP, KVK, IVLP, ORP, ND-NATP, NAIP)
3. New trends in agriculture extension: privatization extension, cyber extension/ extension, market-led extension, farmer-led extension, expert systems, etc.
4. Rural Development: concept, meaning, definition; various rural development programmes launched by Govt. of India. (Community Dev.-meaning, definition, concept & principles, Philosophy of C.D. Rural Leadership: concept and definition, types of leaders in rural context; extension administration: meaning and concept, principles and functions.

Section B

5. Monitoring and evaluation: concept and definition, monitoring and evaluation of extension programmes; transfer of technology: concept and models, capacity building of extension personnel
6. Extension teaching methods: meaning, classification, individual, group and mass contact methods, ICT Applications in TOT (New and Social Media), media mix strategies; communication: meaning and definition, Principles and Functions of Communication, models and barriers to communication.
7. Agriculture journalism: diffusion and adoption of innovation: concept and meaning, process and stages of adoption, adopter categories. Communication, verbal and nonverbal communication; listening and note taking, writing skills, oral presentation skills; field diary and lab record; indexing, footnote and bibliographic procedures.
8. Reading and comprehension of general and technical articles, precise writing, summarizing, abstracting; individual and group presentations, impromptu presentation, public speaking; Group discussion. Organizing seminars and conferences.

**COMPULSORY PAPER: EXT-401: EXTENSION METHODOLOGY AND
COMMUNICATION SKILLS FOR TECHNOLOGY TRANSFER**

Practical

Maximum Marks: 40

Time: 3 hours

Pass Marks: 40%

Teaching hours: 4 hours per week

1. To get acquainted with university extension system.
2. Group discussion- exercise; handling and use of audio visual equipments and digital camera and LCD projector; preparation and use of AV aids.
3. Preparation of extension literature – leaflet, booklet, folder, pamphlet news stories and success stories;
4. Presentation skills exercise; micro teaching exercise
5. A visit to village to understand the problems being encountered by the villagers/ farmer
6. To study organization and functioning of DRDA and other development departments at district level
7. Visit to NGO and learning from their experience in rural development
8. Understanding PRA techniques and their application in village development planning
9. Visit to community radio and television studio for understanding the process of programme production; script writing, writing for print and electronic media, developing script for radio and television
10. Listening and note taking, writing skills, oral presentation skill
11. Field diary and lab record; indexing, footnote and bibliographic procedures.
12. Reading and comprehension of general and technical articles

Suggested Readings

1. Chandrakandan KM, Senthil Kumar & Swatilaxmi. PS. 2005. *Extension Education What? And What Not? RBSA*. Publ.
2. Gallagher K. 1999. *Farmers Field School (FFS) – A Group Extension Process based on Non-Formal Education Methods*. Global EPM Facility, FAO.
3. Ganesan R, Iqbal IM & Anandaraja N. 2003. *Reaching the Unreached: Basics of Extension Education*. Associated Publishing Co.
4. Jalihal KA & Veerabadrach V. 2007. *Fundamentals of Extension Education and Management in Extension*. Concept Publ.
5. Khan PM. 2002. *Textbook of Extension Education*. Himalaya Publ.
6. Ray GL. 2006. *Extension Communication and Management*. Kalyani Publ.
7. Van Den Ban AW & Hawkins HS. 1998. *Agricultural Extension*. 2nd Ed. CBS.
8. Viswanathan M. 1994. *Women in Agriculture and Rural Development*. Printwell Publ.

Punjabi University, Patiala
 Scheme of Studies and Syllabus for B.Sc. (Hons. in Agriculture) Part IV (Sem. VII & VIII)
 Session 2019-2020, 2020-2011 & 2021-22
Session-2022-23, 2023-24, 2024-25

SEMESTER-VIII
COMPULSORY PAPER: AGRI-401: PROTECTED CULTIVATION AND
SECONDARY AGRICULTURE

Max Marks: 100
 Theory : 45 marks
 Internal Assessment: 15 marks
 Practical: 40 marks

Duration of the paper: 3 hrs
 Pass marks: 40% separately in
 theory and practical
 Teaching hours: 4 per week

THEORY
INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Greenhouse technology: Introduction, Types of Green Houses; Plant response to Green house environment, Planning and design of greenhouses, Design criteria of green house for environment control, artificial lights, automation, Green house equipments, materials of construction for traditional and low cost green houses, Irrigation systems used in greenhouses, typical applications, passive solar green house, hot air green house heating systems, green house drying, Cost estimation and economic analysis.
2. Protected cultivation- importance and scope, Status of protected cultivation in India and World types of protected structure based on site and climate. Cladding material involved in greenhouse/poly house. Greenhouse design.
3. Soil preparation and management, Substrate management. Types of benches and containers. Irrigation and fertigation management. Propagation and production of quality planting material of horticultural crops.
4. Greenhouse cultivation of important horticultural crops – rose, carnation, chrysanthemum, gerbera, orchid, anthurium, lilyum, tulip, tomato, bell pepper, cucumber, strawberry, pot plants, etc.

Section B

5. Cultivation of economically important medicinal and aromatic plants. Off-season production of flowers and vegetables. Insect pest and disease management.
6. Important Engineering properties such as physical, thermal and aco & hydrodynamic properties of cereals, pulses and oilseed, their application in PHT equipment design and operation.
7. Drying and dehydration: moisture measurement, EMC, drying theory, various drying method, commercial grain dryer (deep bed dryer, flat bed dryer, tray dryer, fluidized bed dryer, recirculatory dryer and solar dryer).
8. Material handling equipment; conveyer and elevators, their principle, working and selection.

**COMPULSORY PAPER: AGRI-401: PROTECTED CULTIVATION AND
SECONDARY AGRICULTURE**

Practical

Maximum Marks: 40

Pass Marks: 40%

Time: 3 hours

Teaching hours: 4 hours per week

1. Raising of seedlings and saplings under protected conditions
2. Use of protrays in quality planting material production, Bed preparation and planting of crop for production,
3. Soil EC and pH measurement
4. Regulation of irrigation and fertilizers through drip, fogging and misting.
5. Study of different type of green houses based on shape.
6. Determine the rate of air exchange in an active summer winter cooling system.
7. Determination of drying rate of agricultural products inside green house.
8. Study of green house equipments.
9. Visit to various Post Harvest Laboratories.
10. Determination of Moisture content of various grains by oven drying & infrared moisture methods.
11. Determination of engineering properties (shape and size, bulk density and porosity of biomaterials).
12. Determination of Moisture content of various grains by moisture meter.
13. Field visit to seed processing plant.

SPK

**COMPULSORY PAPER: PDC-401: PERSONALITY DEVELOPMENT AND
COMMUNICATION SKILLS**

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in
theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Communication skills: Structural and functional grammar; meaning and process of communication, verbal and nonverbal communication; listening and note taking.
2. Writing skills, oral presentation skills; field diary and lab record; indexing, footnote and bibliographic procedures.
3. Reading and comprehension of general and technical articles, precise writing, summarizing, abstracting; individual and group presentations, impromptu presentation, public speaking;
4. Group discussion. Organizing seminars and conferences.

Section B

5. Nature, Scope and Significance of Organizational Behaviour;
6. Evolution and Historical Background of Organizational Behaviour;
7. Models of Organizational Behaviour Foundations of individual behaviour,
8. Diversity, Micro Organizational behaviour - Personality, self-concept, self-esteem and Self-Efficacy; Attitudes, Perception, Power – types & structures.

Practical

Maximum Marks: 40

Pass Marks: 40%

Time: 3 hours

Teaching hours: 4 hours per week

1. Listening and note taking, writing skills,
2. Oral presentation skills;
3. Field diary and lab record; indexing, footnote and bibliographic procedures.
4. Reading and comprehension of general and technical articles

Session - 2021-23, 2023-24, 2024-25

**SEMESTER-VIII
OPTION-I: AGRON-406: FERTILIZER USE IN CROP PRODUCTION**

Max Marks: 100
Theory : 45 marks
Internal Assessment: 15 marks
Practical: 40 marks

Duration of the paper: 3 hrs
Pass marks: 40% separately in
theory and practical
Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Soil fertility and soil productivity; nutrient sources – fertilizers and manures; essential plant nutrients – functions and deficiency symptoms.
2. Soil and fertilizer nitrogen – sources, forms, immobilization and mineralization, nitrification, denitrification; biological nitrogen fixation - types, mechanism, microorganisms and factors affecting; nitrogenous fertilizers and their fate in soils; management of fertilizer nitrogen in lowland and upland conditions for high fertilizer use efficiency.
3. Soil and fertilizer phosphorus - forms, immobilization, mineralization, reactions in acid and alkali soils; factors affecting phosphorus availability in soils; phosphate fertilizers - behavior in soils and management under field conditions.
4. Potassium - forms, equilibrium in soils and its agricultural significance; mechanism of potassium fixation; management of potassium fertilizers under field conditions.

Section B

5. Sulphur - source, forms, fertilizers and their behavior in soils; calcium and magnesium – factors affecting their availability in soils; management of sulphur, calcium and magnesium fertilizers.
6. Micronutrients – critical limits in soils and plants; factors affecting their availability and correction of their deficiencies in plants; role of chelates in nutrient availability.
7. Common soil test methods for fertilizer recommendations; quantity-intensity relationships; soil test crop response correlations and response functions. Fertilizer use efficiency; blanket fertilizer recommendations – usefulness and limitations; site-specific nutrient management; plant need based nutrient management; integrated nutrient management.
8. Soil fertility evaluation - biological methods, soil, plant and tissue tests; soil quality in relation to sustainable agriculture.

OPTION-I: AGRON-406: FERTILIZER USE IN CROP PRODUCTION

Practical

Maximum Marks: 40

Pass Marks: 40%

Time: 3 hours

Teaching hours: 4 hours per week

1. Chemical analysis of soil for total and available nutrients.
2. Analysis of plants for essential elements.

Suggested Readings

1. Brady NC & Weil RR. 2002. *The Nature and Properties of Soils*. 13th Ed. Pearson Edu.
2. Kabata-Pendias A & Pendias H. 1992. *Trace Elements in Soils and Plants*. CRC Press.
3. Kannaiyan S, Kumar K & Govindarajan K. 2004. *Biofertilizers Technology*. Scientific Publ.
4. Leigh JG. 2002. *Nitrogen Fixation at the Millennium*. Elsevier.
5. Mengel K & Kirkby EA. 1982. *Principles of Plant Nutrition*. International Potash Institute, Switzerland.
6. Mortvedt JJ, Shuman LM, Cox FR & Welch RM. 1991. *Micronutrients in Agriculture*. 2nd Ed. SSSA, Madison.
7. Pierzinsky GM, Sims TJ & Vance JF. 2002. *Soils and Environmental Quality*. 2nd Ed. CRC Press.
8. Stevenson FJ & Cole MA. 1999. *Cycles of Soil: Carbon, Nitrogen, Phosphorus, Sulphur, Micronutrients*. John Wiley & Sons.
9. Tisdale SL, Nelson SL, Beaton JD & Havlin JL. 1999. *Soil Fertility and Fertilizers*. 5th Ed. Prentice Hall of India.
10. Troeh FR & Thompson LM. 2005. *Soils and Soil Fertility*. Blackwell.

SSA

OPTION-I: AGRON-407: CROPPING SYSTEM

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in
theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Farming System-scope, importance, and concept, Types and systems of farming system and factors affecting types of farming, Farming system components and their maintenance.
2. Cropping system and pattern, multiple cropping system, Efficient cropping system and their evaluation, Allied enterprises and their importance, Tools for determining production and efficiencies in cropping and farming system.
3. Sustainable agriculture-problems and its impact on agriculture, indicators of sustainability, adaptation and mitigation, conservation agriculture strategies in agriculture, HEIA, LEIA and LEISA and its techniques for sustainability
4. Integrated farming system-historical background, objectives and characteristics, components of IFS and its advantages, Site specific development of IFS model for different agro-climatic zones, resource use efficiency and optimization techniques, Resource cycling and flow of energy in different farming system, farming system and environment

Section B

5. Cropping systems: definition, indices and its importance; physical resources, soil and water management in cropping systems; assessment of land use.
6. Concept of sustainability in cropping systems and farming systems, scope and objectives; production potential under monoculture cropping, multiple cropping, alley cropping, sequential cropping and intercropping, mechanism of yield advantage in intercropping systems.
7. Above and below ground interactions and allelopathic effects; competition relations; multi-storied cropping and yield stability in intercropping, role of non-monetary inputs and low cost technologies; research need on sustainable agriculture.
8. Crop diversification for sustainability; role of organic matter in maintenance of soil fertility; crop residue management; fertilizer use efficiency and concept of fertilizer use in intensive cropping system. Plant ideotypes for drylands; plant growth regulators and their role in sustainability.

SPM

Punjabi University, Patiala

Scheme of Studies and Syllabus for B.Sc. (Hons. in Agriculture) Part IV (Sem. VI & VII)

Session 2019-2020, 2020-2011 & 2021-22

~~Sessions - 2022-23, 2023-24, 2024-25~~
SEMESTER-VIII

OPTION-I: AGRON-407: CROPPING SYSTEM

Practical

Maximum Marks: 40

Pass Marks: 40%

Time: 3 hours

Teaching hours: 4 hours per week

1. Crop planning
2. Raising field crops in multiple cropping system
3. Field preparation, seed, treatment, nursery raising, sowing, nutrient, water and weed management and management of insect-pests diseases of crops,
4. Harvesting, threshing, drying winnowing, storage and marketing of produce.

Suggested Readings

1. Palaniappan SP & Sivaraman K. 1996. *Cropping Systems in the Tropics: Principles and Management*. New Age.
2. Panda SC. 2003. *Cropping and Farming Systems*. Agrobios.
3. Reddy SR. 2000. *Principles of Crop Production*. Kalyani.

22/4

OPTION-I: AGRON-408: WATER MANAGEMENT AND MICRO IRRIGATION

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Definition of irrigation; History of irrigation in India; Water resources -their exploitation; Scenario of irrigation in India-canal, tank, well and lift irrigation systems.
2. Soil water relations; Introduction to basic terms in water management & irrigation; study of moisture constants and hydro dynamic relations; Measurement of soil moisture-different direct and indirect methods; Expressions of soil moisture and their mutual relations;
3. Plant water relations-critical stages; Meaning and impact of water stress; Water availability & its relationship with nutrient availability and losses; Water management of crops-its definition, meaning, measurement and relevance in crop production; Concept of evapotranspiration and its measurement;
4. Factors affecting water requirement; Study of water requirement of field crops and horticultural crops; Methods of irrigation-surface, subsurface, sprinkler and drip; Their types and efficiencies; Constraints and advantages of different methods;

Section B

5. Efficiency of irrigation: methods to measure them. Quantitative estimation of irrigation water-direct and indirect methods; expressions of flowing water and their mutual relations;
6. Concept of water use efficiency, its relevance and factors affecting it-methods to improve WUE. Assessment of irrigation requirement. Scheduling of irrigation-approaches and methods to schedule irrigation;
7. Development of irrigation plans for individual farms and micro and macro commands. Suitability of irrigation water for irrigation-quality of water & its impact on growth, development and yield of crops.
8. Irrigation control and water conveyance methods their advantages & disadvantages; Concept of drainage-surface and subsurface methods of drainage. Irrigation practices of important field and horticultural crops.

OPTION-I: AGRON-408: WATER MANAGEMENT AND MICRO IRRIGATION

Practical

Maximum Marks: 40

Time: 3 hours

Pass Marks: 40%

Teaching hours: 4 hours per week

1. Determination of soil moisture by direct and indirect methods
2. Study of tensionmeters, gauges, resistance blocks, moisture meters, rapid moisture meters, latest electronic devices
3. Study and determination of maximum water holding capacity, field capacity, permanent wilting point, bulk density and infiltration rates of soil;
4. Study of methods of flow measurement expressions of flow
5. Study and use of weirs, orifices, parshall flumes, flow meters, aquameters.
6. Study of surface irrigation methods-field layouts, their significance;
7. Study of sub-surface irrigation methods;
8. Study of sprinkler system-their types, wetting patterns, coverage and field methods to install sprinkler systems;
9. Study of drip method of irrigation their types and field methods to install them.
10. Study of water requirement of different crops.
11. Study of various on-farm structures for irrigation control, drop structures-their demonstration; Study of drainage structures. S
12. Study and practice of various types of numerical problems in irrigation and water management.

Suggested Reading:

1. Rao, Y.P. and Bhaskar, S.R. Irrigation technology. Theory and practice. Agrotech Publishing Academy, Udaipur.
2. Dilip kumar Mujumdar. Irrigation water management: Principles and Practices. Prentice Hall of India Pvt. Ltd.,
3. S.V. Patil & Rajakumar, G. R., Water Management in Agriculture and Horticultural Crops, Satish serial publishing House, Delhi.
4. Carr M. K. V. and Elias Fereres. Advances in Irrigation Agronomy. Cambridge University Press.
5. Michael, A.M. Irrigation Theory and practice. Vikas publishing house Pvt. Ltd.
6. Water Technology Centre. Water Requirement and irrigation management of crops in India.

gpa

OPTION-II: HORT-406: POST HARVEST MANAGEMENT OF HORTICULTURE CROPS

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Maturity indices, harvesting practices for specific market requirements, influence of pre-harvest practices, enzymatic and textural changes, respiration, transpiration.
2. Physiology and biochemistry of fruit ripening, ethylene evolution and ethylene management, factors leading to post-harvest loss, pre-cooling.
3. Treatments prior to shipment, viz., chlorination, waxing, chemicals, biocontrol agents and natural plant products.
4. Methods of storage: ventilated, refrigerated, MAS, CA storage, physical injuries and disorders. Packing methods and transport, principles and methods of preservation, food processing, canning, fruit juices, beverages, pickles, jam, jellies, candies.

Section B

5. Dried and dehydrated products, nutritionally enriched products, fermented fruit beverages, packaging technology, processing waste management, food safety standards.
6. Cut flower standards and grades, harvest indices, harvesting techniques, post-harvest handling.
7. Methods of delaying flower opening, Pre-cooling, pulsing, packing, Storage & transportation, marketing, export potential, institutional support.
8. Agri Export Zones for Cut rose, cut chrysanthemum, carnation, gerbera, gladioli, tuberose, orchids, anthurium, aster, lilies, bird of paradise, heliconia, alstroemeria, alpinia, ornamental ginger, bromeliads, dahlia, gypsophilla, limonium, statice, stock, cut foliages and fillers.

~~Session - 2022-23, 2023-24, 2024-25~~

SEMESTER-VIII

OPTION-II: HORT-406: POST HARVEST MANAGEMENT OF HORTICULTURE
CROPS

	Practical	Time: 3 hours
Maximum Marks: 40		
Pass Marks: 40%	Teaching hours: 4 hours per week	

1. Analyzing maturity stages of commercially important horticultural crops i
2. Improved packing and storage of important horticultural commodities
3. Physiological loss in weight of fruits and vegetables
4. Estimation of transpiration, respiration rate, ethylene release
5. Study of vase life extension in cut flower using chemicals
6. Estimation of quality characteristics in stored fruits and vegetables
7. Visit to cold storage and CA storage units
8. Visit to fruit and vegetable processing units
9. Project preparation, evaluation of processed horticultural products.
10. Flower harvesting techniques, post-harvest handling,
11. Visit to commercial cut flower units and case study.

Suggested Readings

1. Bhutani RC. 2003. *Fruit and Vegetable Preservation*. Biotech Books.
2. Chadha KL & Pareek OP. (Eds.), 1996 *Advances in Horticulture*. Vol. IV. Malhotra Publ. House.
3. Haid NF & Salunkhe SK. 1997. *Post Harvest Physiology and Handling of Fruits and Vegetables*. Grenada Publ.
4. Mitra SK. 1997. *Post Harvest Physiology and Storage of Tropical and Sub-tropical Fruits* CABI.
5. Ranganna S. 1997. *Hand Book of Analysis and Quality Control for Fruit and Vegetable Products*. Tata McGraw-Hill.
6. Sudheer KP & Indira V. 2007. *Post Harvest Technology of Horticultural Crops*. New India Publ. Agency.
7. Willis R, Mc Glassen WB, Graham D & Joyce D. 1998. *Post Harvest. An*

30/10

**OPTION-II: HORT-407: TISSUE CULTURE AND MICROPROPAGATION
TECHNIQUES IN HORTICULTURE**

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in
theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Harnessing biotechnology in horticultural crops and tools techniques and role in horticulture industry
2. Influence of plant materials, physical, chemical factors and growth regulators on growth and development of plant cell, tissue and organ culture.
3. Cytodifferentiation, organogenesis, somatic embryogenesis. *In vitro* lines for biotic and abiotic stress.
4. Callus culture – types, cell division, differentiation, morphogenesis, organogenesis, embryogenesis.

Section B

5. Organ culture-meristem, embryo, anther, ovule culture, embryo rescue, somaclonal variation, protoplast culture and fusion, somatic hybrids and cybrids, regeneration and characterization of hybrids and cybrids.
6. Meristem culture for disease elimination, production of haploids through anther and pollen culture – embryo and ovule culture, micrografting, wide hybridization and embryo rescue techniques, *in vitro* pollination and fertilization.
7. Establishment of tissue cultured plants. Hardening media, Physiology of hardening - hardening and field transfer, techniques and establishment of tissue culture plants in the primary and secondary nursery.
8. Suspension culture, *In vitro* production of secondary metabolites. Use of bioreactors and *in vitro* methods for production of secondary metabolites, quantification and quality analysis of secondary metabolites using HPLC *In vitro* selection for biotic and abiotic stress, Genetic engineering in horticulture crops, use of molecular markers, achievements of biotechnology in horticultural crops.

**OPTION-II: HORT-407: TISSUE CULTURE AND MICROPROPAGATION
TECHNIQUES IN HORTICULTURE**

Practical

Maximum Marks: 40
Pass Marks: 40%

Time: 3 hours
Teaching hours: 4 hours per week

1. Visit to low cost, commercial and homestead tissue culture laboratories,
2. Media preparation, inoculation of explants for clonal propagation,
3. Callus induction and culture, regeneration of plantlets from callus, sub-culturing,
4. Techniques on anther, ovule, embryo culture, somaclonal variation,
5. *In vitro* mutant selection against abiotic stress,
6. Development of protocols for mass multiplication,
7. Project development for establishment of commercial tissue culture laboratory.

Suggested Readings

1. Bajaj YPS. (Ed.) 1989. *Biochemistry in Agriculture and Forestry*. Vol. V, *Fruits*. Springer.
2. Brown TA. 2001. *Gene Cloning and DNA Analysis and Introduction*. Blackwell Publ.
3. Chopra VL & Nasim A. 1990. *Genetic Engineering and Biotechnology – Concepts, Methods and Applications*. Oxford & IBH.
4. Gorden H & Rubsch S. 1960. *Hormones and Cell Culture*. AB Book Publ.
5. Keshavachandran R & Peter KV. 2008. *Plant Biotechnology: Tissue Culture and Gene Transfer*. Orient & Longman (Universal Press).
5. Keshavachandran R, Nazeem PA, Girija D, John PS & Peter KV. 2007. *Recent Trends in Biotechnology of Horticultural Crops*. Vols. I, II. New India Publ. Agency.
6. Parthasarathy VA, Bose TK, Deka PC, Das P, Mitra SK & Mohanadas S. 2001. *Biotechnology of Horticultural Crops*. Vols. I-III. Naya Prokash.
7. Pierik RLM. 1987. *In vitro Culture of Higher Plants*. Martinus Nijhoff Publ.
8. Skoog F & Miller CO. 1957. *Chemical Regulation of Growth and Formation in Plant Tissue Culture in vitro*. Symp. Soc. Exp. Biol. 11: 118-131
9. Vasil TK, Vasi M, White DNR & Bery HR. 1979. *Somatic Hybridization and Genetic Manipulation in Plants: Plant Regulation and World Agriculture*. Plenum Press.
10. Williamson R. 1981-86. *Genetic Engineering*. Vols. I-V. Academic Press.

OPTION-II: HORT-408: BREEDING OF HORTICULTURAL CROPS

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in
theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Origin and distribution, taxonomical status - species and cultivars, cytogenetics, genetic resources, blossom biology, breeding systems, breeding objectives, ideotypes
2. Approaches for crop improvement - introduction, selection, hybridization, mutation breeding, polyploid breeding, rootstock breeding, improvement of quality traits, resistance breeding for biotic and abiotic stresses, biotechnological interventions, achievements and future thrust in the following fruit crops Mango, banana, Citrus, grapes, guava, papaya, Apple, pear, plums, peach, and strawberry.
3. Origin, botany, taxonomy, cytogenetics, genetics, breeding objectives, breeding methods (introduction, selection, hybridization, mutation), varieties and varietal characterization, resistance breeding for biotic and abiotic stress in vegetable crops: Potato, tomato, Eggplant, hot pepper, sweet pepper, okra, Peas, melons, pumpkins, Cabbage, cauliflower, carrot and radish.
4. Quality improvement, molecular marker, genomics, marker assisted breeding and QTLs, biotechnology and their use in breeding in vegetable crops: Potato, tomato, Eggplant, hot pepper, sweet pepper, okra, Peas, melons, pumpkins, Cabbage, cauliflower, carrot and radish.

Section B

5. Genetic inheritance -- of flower colour, doubleness, flower size, fragrance, post-harvest life.
6. Breeding methods suitable for sexually and asexually propagated flower crops and ornamental plants introduction, selection, domestication, polyploid and mutation breeding for varietal development.
7. Role of heterosis, Production of hybrids, Male sterility, incompatibility problems, seed production of flower crops.
8. Breeding constraints and achievements made in commercial flowers - rose, chrysanthemum, marigold, tuberose, carnation, gerbera and gladioli and ornamental foliage. Issue of patenting and Plant Variety Protection in India.

OPTION-II: HORT-408: BREEDING OF HORTICULTURAL CROPS

Practical

Maximum Marks: 40

Time: 3 hours

Pass Marks: 40%

Teaching hours: 4 hours per week

1. Study of anthesis, estimating fertility status,
2. Practices in hybridization, ploidy breeding, mutation breeding,
3. Evaluation of biometrical traits and quality traits,
4. Developing breeding programme for specific traits,
5. Visit to research stations working on tropical, subtropical and temperate fruit improvement
6. Analysis of various qualitative and quantitative traits in germplasm, hybrids and segregating generations
7. Induction of flowering
8. Palanological studies
9. Selfing and crossing techniques in vegetable crops
10. Hybrid seed production of vegetable crops
11. Screening techniques for insect-pests, disease and environmental stress resistance in vegetable crops,
12. Description of botanical features– Cataloguing of cultivars, varieties and species in flowers,
13. Induction of mutants through physical and chemical mutagens
14. Induction of polyploidy

Suggested Readings

1. Allard RW. 1999. *Principles of Plant Breeding*. John Wiley & Sons.
2. Bhattacharjee SK. 2006. *Advances in Ornamental Horticulture*. Vols. I-VI. Pointer Publ.
3. Bose TK, Mitra SK & Sanyal D. (Eds.). 2002. *Fruits of India – Tropical and Sub-tropical*. 3rd Ed. Vols. I, II. Naya Udyog.
4. Chadha KL & Choudhury B. 1992. *Ornamental Horticulture in India*. ICAR.
5. Chadha KL. 1995. *Advances in Horticulture*. Vol. XII. Mahotra Publ. House.
6. Dhillion BS, Tyagi RK, Saxena S, & Randhawa GJ. 2005. *Plant Genetic Resources: Horticultural Crops*. Narosa Publ. House.
7. Hayward MD, Bosenmark NO & Romagosa I. (Eds.). 1993. *Plant Breeding-Principles and Prospects*. Chapman & Hall.
8. Janick J & Moore JN. 1996. *Fruit Breeding: Vols.I-III*. John Wiley & Sons.
9. Kallioo G. 1998. *Vegetable Breeding*. Vols. I-III (Combined Ed.). Panima Edu. Book Agency.
10. Kumar JC & Dhalwal MS. 1990. *Techniques of Developing Hybrids in Vegetable Crops*. Agro Botanical Publ.
11. Paroda RS & Kallioo G. (Eds.). 1995. *Vegetable Research with Special Reference to Hybrid Technology in Asia-Pacific Region*. FAO.
12. Peter KV & Pradeepkumar T. 2008. *Genetics and Breeding of Vegetables*. Revised, ICAR.
13. Radha T & Mathew L. 2007. *Fruit Crops*. New India Publ. Agency.
14. Rai N & Rai M. 2006. *Heterosis Breeding in Vegetable Crops*. New India Publ. Agency.
15. Singh PK, Dasgupta SK & Tripathi SK. 2004. *Hybrid Vegetable Development*. International Book Distributing Co.

~~5-25-10-21~~ - 2022-23, 2023-24, 2024-25

SEMESTER-VIII
OPTION-III: CPB-406: BREEDING FOR BIOTIC AND ABIOTIC STRESS
RESISTANCE

Max Marks: 100
Theory : 45 marks
Internal Assessment: 15 marks
Practical: 40 marks

Duration of the paper: 3 hrs
Pass marks: 40% separately in
theory and practical
Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Importance of plant breeding with special reference to biotic and abiotic stress resistance; Classification of biotic stresses – major pests and diseases of economically important crops
2. Concepts in insect and pathogen resistance; Analysis and inheritance of resistance variation; Host defence responses to pathogen invasions- Biochemical and molecular mechanisms; Acquired and induced immunity and systemic acquired resistance (SAR); Host-pathogen interaction, gene-for-gene hypothesis, molecular evidence for its operation and exceptions
3. Classical and molecular breeding methods - Measuring plant resistance using plant fitness; Behavioural, physiological and insect gain studies. Phenotypic screening methods for major pests and diseases; Recording of observations; Correlating the observations using marker data – Gene pyramiding methods and their implications.
4. Concept of signal transduction and other host-defence mechanisms against viruses and bacteria. Types and genetic mechanisms of resistance to biotic stresses –Horizontal and vertical resistance in crop plants. Quantitative resistance/Adult plant resistance and Slow rusting resistance

Section B

5. Classification of abiotic stresses - Stress inducing factors –moisture stress/drought and water logging & submergence; Acidity, salinity/alkalinity/sodicity; High/Low temperature, wind; etc. Stress due to soil factors and mineral toxicity
6. Physiological and Phenological responses; Emphasis of abiotic stresses in developing breeding methodologies. Genetics of abiotic stress resistance; Genes and genomics in breeding cultivars suitable to low water regimes and water logging & submergence, high and low/freezing temperatures
7. Utilizing MAS procedures for identifying resistant types in important crops like rice, sorghum, wheat, cotton etc; Breeding for resistance to stresses caused by toxicity, deficiency and pollutants/contaminants in soil, water and environment.
8. Exploitation of wild relatives as a source of resistance to biotic and abiotic factors in major field crops - Transgenics in management of biotic and abiotic stresses, use of toxins, protease inhibitors, lectins, chitinases and Bt for diseases and insect pest management-Achievements.

SP

**OPTION-III: GPB-406: BREEDIN FOR BIOTIC AND ABIOTIC STRESS
RESISTANCE**

Practical

Maximum Marks: 40
Pass Marks: 40%

Time: 3 hours
Teaching hours: 4 hours per week

1. Phenotypic screening techniques for sucking pests and chewing pests
2. Phenotypic screening techniques for nematodes and borers
3. Use of standard MAS procedures -Phenotypic screening methods for diseases caused by fungi and bacteria
4. Symptoms and data recording
5. Screening crops for drought and flood resistance
6. Screening varieties of major crops for acidity and alkalinity
7. Understanding the climatological parameters and predisposal of biotic and abiotic stress factors- ways of combating them.

Suggested Readings

1. Blum A. 1988. *Plant Breeding for Stress Environments*. CRC Press.
2. Christiansen MN & Lewis CF. 1982. *Breeding Plants for Less Favourable Environments*. Wiley International.
3. Fritz RS & Simms EL. (Eds.). 1992. *Plant Resistance to Herbivores and Pathogens: Ecology, Evolution and Genetics*. The University of Chicago Press.
4. Li PH & Sakai A. 1987. *Plant Cold Hardiness*. Liss, New York
5. Luginpill P. 1969. *Developing Resistant Plants - The Ideal Method of Controlling Insects*. USDA, ARS, Washington DC.
6. Maxwell FG & Jennings PR. (Eds.). 1980. *Breeding Plants Resistant to Insects*. John Wiley & Sons.
7. Painter RH. 1951. *Insect Resistance in Crop Plants*. MacMillan, New York.
8. Russel GE. 1978. *Plant Breeding for Pest and Disease Resistance*. Butterworths.
9. Sakai A & Larcher W. 1987. *Frost Survival in Plants*. Springer-Verlag.
10. Turener NC & Kramer PJ. 1980. *Adaptation of Plants to Water and High Temperature Stress*. John Wiley & Sons.
11. van der Plank JE. 1982. *Host-Pathogen Interactions in Plant Disease*. Academic Press.

5/14

OPTION-III: CPB-407: IPR, BIODIVERSITY AND BIOSAFETY

Max Marks: 100

Theory : 75 marks

Internal Assessment: 25 marks

Duration of the paper: 3 hrs

Pass marks: 40%

Teaching hours: 5 per week

**THEORY
INSTRUCTIONS FOR THE PAPER-SETTER**

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 11 marks while each question from Section B will carry 11½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 15 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Introduction and meaning of intellectual property, Intellectual Property Rights (IPR) and different forms, brief introduction to GATT, WTO, TRIPs and WIPO
2. Treaties for IPR protection: Madrid protocol, Berne Convention, Budapest treaty, etc.
3. Types of Intellectual Property and legislations covering IPR in India: -Patents, Copyrights, Trademark, Industrial design, Geographical indications, Integrated circuits, Trade secrets, Patents Act 1970, Patents and patenting process, Patent system in India, patentability, process and product patent, filing of patent, patent specification, patent claims, Patent opposition and revocation, infringement, Compulsory licensing, Patent Cooperation Treaty, Patent search and patent database.
4. Origin and history including a brief introduction to UPOV for protection of plant varieties, Protection of plant varieties under UPOV and PPV&FR Act of India, Plant breeders' rights, Registration of plant varieties under PPV&FR Act 2001, breeders, researcher and farmers rights. Traditional knowledge-meaning and rights of TK holders.

Section B

5. Introduction to GATT and WTO. WTO Framework: Non-Tariff Barriers (NTBs) and WTO. Environment: protests against globalisation and WTO. Agreement on TRIPS. Bio-piracy. GMOs in agriculture. Salient features of Indian Patent (Amendment) Act 2005.
6. Biodiversity definition, importance and geographical causes for diversity; Species and population biodiversity, maintenance of ecological biodiversity hot spots in India.
7. Convention on biological diversity; Cartagena Protocol of bio-safety, and risk management for GMO's; Bio-safety guidelines, rules and regulations and regulatory frame work for GMOs in India.
8. International treaty on plant genetic resources for food and agriculture (ITPGRFA). Indian Biological Diversity Act, 2002 and its salient features, access and benefit sharing.

OPTION-III: CPB-407: IPR, BIODIVERSITY AND BIOSAFETY

Suggested Readings:

1. Singh B D 2007 Biotechnology: Expanding Horizon. Kalyani Publishers.
2. <http://patentoffice.nic.in>
3. www.wipo.org
4. www.dbindia.nic.in
5. www.dbbiosafety.nic.in

SPM

OPTION-III: GPB-408: POPULATION AND BIOMETRICAL GENETICS

Max Marks: 100

Theory : 45 marks

Internal Assessment: 15 marks

Practical: 40 marks

Duration of the paper: 3 hrs

Pass marks: 40% separately in
theory and practical

Teaching hours: 4 per week

THEORY

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B each will have four questions from the respective sections of the syllabus. Each question from Section A will carry 7 marks while each question from Section B will carry 7½ marks. The section C, which will cover the entire syllabus uniformly, will consist of 8 short answer type questions each of 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions from each section A and B and the entire section C.

Section A

1. Population - Properties of population - Mendelian population - Genetic constitution of a population through time, space, age structure etc.
2. Mating systems - Random mating population - Mating frequencies - Non-dominance - Co-dominance, Non-random mating: selfing-inbreeding coefficient-panmictic index-sib mating-Assortative mating and disassortative mating-Pedigree populations and close inbreeding, Snyder's ratio, importance and its effect over random mating in succeeding generations.
3. Frequencies of genes and genotypes-Causes of change: population size, differences in fertility and viability, migration and mutation. Hardy-Weinberg equilibrium - Hardy-Weinberg law - Proof - Applications of the Hardy-Weinberg law - Test of Hardy-Weinberg equilibrium
4. Multiple alleles - More than one locus - Sex linked genes; Use of gene and genotypic frequencies evaluation in field population level; Interpretations - Changes of gene frequency - Migration - Mutation - Recurrent and nonrecurrent - Selection - Balance between selection and mutation - Selection favouring heterozygotes - Overdominance for fitness.

Section B

5. Estimation of selection - Estimation of disequilibrium-Estimation of linkage-Correlation between relatives and estimation of F_2
6. Effect of inbreeding and sibling in cross pollinated crops. Gene substitution and average effects;
7. Breeding value- Genetic drift, Genetic slippage, Co-adapted gene complexes, Homoeostasis- Adaptive organization of gene pools.
8. Polymorphism- Balanced and Non-balanced polymorphism, heterozygous advantage-Survival of recessive and deleterious alleles in populations.

Signature

OPTION-III: GPR-408: POPULATION AND BIOMETRICAL GENETICS

Practical

Maximum Marks: 40

Pass Marks: 40%

Time: 3 hours

Teaching hours: 4 hours per week

1. Genetic exercises on probability
2. Estimation of gene frequencies
3. Exercises on factors affecting gene frequencies
4. Estimation of average effect of gene substitution and breeding value
5. Exercises on inbreeding and linkage disequilibrium- Cavalli's joint scaling test
6. Exercises of different mating designs
7. Estimation of different population parameters from experimental data
8. Measurement of genotype-environment interaction

Suggested Readings

1. Chawla V & Yadava RK. 2006. *Principles of Population Genetics – A Practical Manual*. Dept. of Genetics, CCS HAU Hisar.
2. Falconer DS & Mackay J. 1996. *Introduction to Quantitative Genetics*. Longman.
3. Jain JP, Jain J & Parbhakaran, VT. 1992. *Genetics of Populations*. South Asia Books.
4. Li CC. 1955. *Population Genetics*. The Univ. of Chicago Press.
5. Mather K & Jinks JL. 1982. *Biometrical Genetics*. Chapman & Hall.
6. Sorrens D & Donel G. 2007. *Methods in Quantitative Genetics*. Series: *Statistics for Biology and Health*. Likelihood.
7. Tomar SS. 1992. *Textbook of Population Genetics*. Universal Publication.

2024

PUNJABI UNIVERSITY, PATIALA



**Ordinances
and
Outlines of Tests,
Syllabi and Courses of Reading
For
BAFU3PUP**

**Bachelor of Commerce (Accounting & Finance)
Part-III**

(Semester V & VI)

FOR 2022-23, 2023-24 & 2024-25 SESSIONS

R.S. Arora

**BACHELOR OF COMMERCE (ACCOUNTING AND FINANCE) THIRD YEAR
FOR 2022-23, 2023-24 & 2024-25 SESSIONS
Bachelor of Commerce (Accounting and Finance) Fifth Semester**

	Paper	Marks
BAFU3501T	Cost Accounting	100
BAFU3502T	Corporate Tax Planning	100
BAFU3503T	Financial Services	100
BAFU3504T	Research Methodology & Statistical Techniques	100
BAFU3505T	Project Planning and Control	100

Bachelor of Commerce (Accounting and Finance) Sixth Semester

	Paper	Marks
BAFU3601T	Strategic Cost Accounting	100
BAFU3602T	Security Analysis and Portfolio Management	100
BAFU3603T	Corporate Financial Accounting	100
BAFU3604T	Contemporary Auditing	100
BAFU3605W	Workshop on Stock Market Operations	50
BAFU3606V	Viva-Voce	50

R. S. Arora

(2022-23, 2023-24 & 2024-25)

**BACHELOR OF COMMERCE (ACCOUNTING AND FINANCE)
FIFTH SEMESTER**

BAFU3501T: COST ACCOUNTING

Time Allowed: 3 Hrs.

Max. Marks: 100

Period per week : 6

External Assessment: 70

Pass percentage : 35%

Internal Assessment: 30

Note : Simple Calculator(not scientific) is allowed

Instructions for Paper-Setters/Examiners

The question paper covering the entire course shall be divided into three sections as follows:

SECTION-A

It will consist of essay type and numerical questions. Four questions, two theory and two numerical, shall be set by the examiner from Unit-I of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-B

It will consist of essay type and numerical questions. Four questions, two theory and two numerical, shall be set by the examiner from Unit-II of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-C

It will consist of 12 very short answer questions from entire syllabus. Students are required to attempt 10 questions up to five lines in length. Each question shall carry 3 marks; total weight of the section shall be 30 marks

UNIT-I

Introduction: Nature and Scope of Cost Accounting, Cost concepts and classification, Installation of Costing System.

Accounting for material: Material control, concept and techniques, Pricing of Material issues, Treatment of material losses.

Accounting for Labour: Labour turnover, Idle time and overtime; Methods of Wage Payment.

UNIT-II

Accounting for overhead: Classification and departmentalisation, Absorption of overheads, Determination of overhead rates, Job, Batch and contract costing, operation Costing, Process costing including Joint product and by product.

Course Outcome: After the completion of this course students will learn about introduction of costing system and various elements of cost. They will also be able to learn various methods of costing.

Reference Books :

1. S.P. Jain "Cost Accounting", Kalyani Publishers
2. Jawalar Lal "Cost Accounting", (Tata Mcgraw Hill),
3. M.N. Arora "Cost Accounting", Bhattacharya (Vikas Publishing House),
4. Asish K. (Prentice Hall),
5. V.K. Saxena, C.D. "Cost Accounting", Vashish (Sultan Chand & Sons)

(2022-23, 2023-24 & 2024-25)

BAFU3502T: CORPORATE TAX PLANNING

Time Allowed: 3 Hrs.

Period per week : 6

Pass percentage : 35%

Note : Simple Calculator(not scientific) is allowed

Max. Marks: 100

External Assessment: 70

Internal Assessment: 30

Instructions for Paper-Setters/Examiners

The question paper covering the entire course shall be divided into three sections as follows:

SECTION-A

It will consist of essay type and numerical questions. Four questions shall be set by the examiner from Unit-I of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-B

It will consist of essay type and numerical questions. Four questions shall be set by the examiner from Unit-II of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-C

It will consist of 12 very short answer questions from entire syllabus. Students are required to attempt 10 questions up to five lines in length. Each question shall carry 3 marks; total weight of the section shall be 30 marks

Unit-I

Introduction to Tax Management; Concept of Tax Planning, Tax avoidance and tax evasions; Methods of tax planning; Justification of tax.

Tax Planning for New Business: Tax Planning, with reference to location, nature and form of organization of new business.

Tax Issues relating to Amalgamation: Tax Planning with reference to amalgamation.

Unit-II

Tax Planning and Financial Management Decisions: Tax Planning relating to capital structure decision; Dividend policy, Inter corporate dividends and bonus shares.

Tax Planning and compensation package; Double taxation avoidance agreements tax planning and non-residents; Tax payments; Tax deduction and Collection at source, Advance payment of tax.

Course Outcome: This course will help the students to know the about concept of tax planning, and tax avoidance. They will become well versed with tax planning for new business and tax issues of amalgamation. They will also understand tax planning relation to capital structure, double taxation avoidance, tax deduction and collection at source.

Reference Books:

1. Ahuja Dr. Girish "Corporate Tax Planning" Bharat Law House,
2. Kumar Kaushal " Corporate Tax Planning" Atlantic Pub.
3. Lakhotia R.N. "Corporate Tax Planning" Taxmann's Publishers

(2022-23, 2023-24 & 2024-25)

BAFU3503T: FINANCIAL SERVICES

Time allowed : 3 hours
Pass Marks : 35%
Periods per week : 6

Max Marks: 100
Internal Assessment: 30
External Assessment: 70

Instructions for Paper-Setters/Examiners

The question paper covering the entire course shall be divided into three sections as follows:

SECTION-A

It will consist of essay type questions. Four questions shall be set by the examiner from Unit-I of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-B

It will consist of essay type questions. Four questions shall be set by the examiner from Unit-II of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-C

It will consist of 12 very short answer questions from entire syllabus. Students are required to attempt 10 questions up to five lines in length. Each question shall carry 3 marks; total weight of the section shall be 30 marks

UNIT-I

Financial Services- Meaning, Types, Nature & Role; Evolution of Financial Services in India, Financial Services in India- An overview, Merchant Banking: Role, Services, SEBI guidelines, recent development; Leasing and Hire Purchase in Indian context. Mutual Funds in India.

UNIT-II

Factoring & Forfeiting, Venture Capital; Characteristics and SEBI guidelines; Housing Finance: growth and types, NHB and other housing finance institutions, Prudential norms for housing finance companies, Securitisation of housing loans; Consumer Finance: growth and types; Credit rating services in Indian context; Significance, Type, Regulation, Credit Rating Agencies.

Course Outcome: After the completion of this course students will learn about Nature, role and evolution of financial services. Leasing, hire purchase and mutual funds. They will have detailed understanding of factoring, forfeiting, venture capital, housing finance, consumer finance and credit rating agencies.

Reference Reading:

- | | |
|---|---------------------|
| 1. Financial Markets & Institutions | L. M. Bhole |
| 2. Financial Markets & Institutions | Gordon and Natrajan |
| 3. Indian Financial System | M. Y. Khan |
| 4. Management of Financial Institutions & Markets | G. S. Batra |



(2022-23, 2023-24 & 2024-25)

BAFU3504T: RESEARCH METHODOLOGY & STATISTICAL TECHNIQUES

Time Allowed: 3 Hrs.

Max. Marks: 100

Period per week : 6

External Assessment: 70

Pass percentage : 35%

Internal Assessment: 30

Note : Simple Calculator(not scientific) is allowed

Instructions for Paper-Setters/Examiners

The question paper covering the entire course shall be divided into three sections as follows:

SECTION-A

It will consist of essay type questions. Four questions shall be set by the examiner from Unit-I of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-B

It will consist of essay type questions. Four questions shall be set by the examiner from Unit-II of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-C

It will consist of 12 very short answer questions from entire syllabus. Students are required to attempt 10 questions up to five lines in length. Each question shall carry 3 marks; total weight of the section shall be 30 marks

Unit-I

Introduction to Research: Nature, Objective, Types & Utility, Process of Research.
Hypothesis: Meaning, Nature, Importance, Types, Criteria for construction of Hypothesis.
Sources of deriving Hypothesis, Data Collection Method.
Primary Sources: Observation, Interview, Questionnaire, Schedules, Surveys
Secondary Source: Types and sources of locating secondary data and computer assisted information acquisition.

Unit-II

Sampling Methods: Probability and non probability methods. Sampling frame, Sampling design. Sampling and non Sampling errors, size of sample.
Statistical Analysis of Data: Probability distribution, Binomial, Poisson and Normal distribution, Testing of hypothesis: Procedure, Measuring Power of test, Test of hypothesis: Parametric & Non Parametric tests different test of significance type I and II error
Statistical Test: Chi square, t-test, F-test, z-test & w-test.

Course Outcome: This course will help the students to know the about nature, types, process of research, hypotheses, data collection method, sampling methods, statistical analysis of data and hypothesis testing.

Reference Books:

1. C.R.Kothari " Research Methodology & Statistical Tech" (New Age International
2. Chaudhary CM " Research Methodology" (RBSA)
3. Gupta S.P. "Statistical Methods" Sultan Chand
4. Pannersel VAM.R " Research Methodology" PHI Learning

R. S. Arora

BAFU3505T: PROJECT PLANNING AND CONTROL

Time Allowed: 3 Hrs.

Max. Marks: 100

Period per week : 6

External Assessment: 70

Pass percentage : 35%

Internal Assessment: 30

Instructions for Paper-Setters/Examiners

The question paper covering the entire course shall be divided into three sections as follows:

SECTION-A

It will consist of essay type questions. Four questions shall be set by the examiner from Unit-I of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-B

It will consist of essay type questions. Four questions shall be set by the examiner from Unit-II of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-C

It will consist of 12 very short answer questions from entire syllabus. Students are required to attempt 10 questions up to five lines in length. Each question shall carry 3 marks; total weight of the section shall be 30 marks

UNIT-I

Project Identification, Formulation and Planning: Understanding environment for business opportunities, Idea generation, short listing and selection of product/services stages in Venture Appraisal-Technical, Financial, Economic and Social Appraisal. Location, Factory Design and Layout. Social Cost- Benefit Analysis (broader concept only). Feasibility Report Preparation for new Enterprise- format and contents.

Market Appraisal: Market Survey- Design, Data Sources and Methodology, Market Segmentation and product differentiation, Forecasting Future demand and Distribution Analysis.

UNIT-II

Application of Capital Budgeting Techniques, Risk and Uncertainty Analysis for the new enterprise, Planning Capital Structure and Financing Project, Financial viability Study.

Project Implementation and Management: Project Organisation and Control Network Analysis –PERT & CPM, Cost and Time Over-run Project Follow up and Monitoring.

Course Outcome: After the completion of this course students will learn about project identification, idea generation, venture appraisal, location and layout, market appraisal and market segmentation. They will also learn about application of capital budgeting, capital structure and financing of project, project implementation and control network analysis.



Reference Books:

1. Chandra, Prasanna: Project Preparation, Appraisal and Implementation, Tata Mc Graw Hill, N. Delhi.
2. Desai, Vasant: Entrepreneurial Development, Vol.II Project Formulation Appraisal and Financing for Small Industry, Himalaya Publ. N. Delhi.
3. Nicholas: Project Management for Business and Technology: Principles and Practice (Prentice Hall of India, N. Delhi.
4. Pitala: Project Appraisal Techniques, Oxford & IBH Publication.
5. Yound, Trevour L. : Planning and Implementing Project, Sterling Publishing Ltd.
6. Krishnan and Moorthy : Text Book of Project Management, Mac Millan India Ltd.
7. Singh, Narendra : Project Management & Control, Himalaya Publ., N. Delhi.

R. S. Arora

(2022-23, 2023-24 & 2024-25)

**BACHELOR OF COMMERCE (ACCOUNTING AND FINANCE)
SIXTH SEMESTER**

BAFU3601T: STRATEGIC COST ACCOUNTING

Time Allowed: 3 Hrs.

Max. Marks: 100

Period per week : 6

External Assessment: 70

Pass percentage : 35%

Internal Assessment: 30

Note : Simple Calculator(not scientific) is allowed

Instructions for Paper-Setters/Examiners

The question paper covering the entire course shall be divided into three sections as follows:

SECTION-A

It will consist of essay type and numerical questions. Four questions shall be set by the examiner from Unit-I of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-B

It will consist of essay type and numerical questions. Four questions shall be set by the examiner from Unit-II of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-C

It will consist of 12 very short answer questions from entire syllabus. Students are required to attempt 10 questions up to five lines in length. Each question shall carry 3 marks; total weight of the section shall be 30 marks

Unit-I

Traditional Costing System: Cost Management system; concepts, factors affecting cost management, Cost assignment; Direct tracing, Driver tracing and allocation, Cost behaviour.

Strategic Cost Management; Concept and Philosophy, Key elements in SCM, Value Chain Analysis, Strategic Positioning, and Cost driver analysis, Activity based Costing

Unit-II

Activity Based Management and Activity Based Budgeting: Target costing, Life cycle costing, Kaizen costing, Back Flush Costing.

Cost Management and Performance Evaluation, Evaluation Criterion; Return on capital system, The Balanced Scorecard; Strategic Based Control; Concept, process and Implementation of balanced scorecard.

Course Outcome: After completion of this course student will learn about concept, factors affecting cost management, Strategic cost management, activity based costing, Activity based budgeting, target costing and kaizen costing. They will also learn about the cost management, performance evaluation through balance score card.

Reference Books:

1. Bhattacharya K. Ashish "Cost Accounting" Prentice Hall
2. Sexena V.K. "Cost Accounting" Sultan Chand
3. Shank Govindarajan "Strategic Cost Management"
4. Mishra Aggarwal " Strategic Cost Management" RBSA Pub.
5. Cost Management "Blocher" Tata Mc Graw Hill

R.S. Arora

(2022-23, 2023-24 & 2024-25)

BAFU3602T: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

Time Allowed: 3 Hrs.
Period per week : 6
Pass percentage : 35%

Max. Marks: 100
External Assessment: 70
Internal Assessment: 30

Instructions for Paper-Setters/Examiners

The question paper covering the entire course shall be divided into three sections as follows:

SECTION-A

It will consist of essay type questions. Four questions shall be set by the examiner from Unit-I of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-B

It will consist of essay type questions. Four questions shall be set by the examiner from Unit-II of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-C

It will consist of 12 very short answer questions from entire syllabus. Students are required to attempt 10 questions up to five lines in length. Each question shall carry 3 marks; total weight of the section shall be 30 marks

Unit-I

Investment- Meaning. Return and Risk, Asset Allocation decision, selecting investment in global market, Organisation and Functioning of security market.

Valuation model of equity shares, preference shares and debenture

Investment Analysis: Fundamental analysis covering industry, Company & Technical Analysis.

Unit-II

Portfolio Management- Concept, Objective & significance

Portfolio Theories: Markowitz model, Sharpe model, Capital asset, Pricing model, Arbitrage Pricing theory.

Techniques of portfolio revision; scope and formula plans, portfolio performance evaluation.

Course Outcome: This course will help the students to know the about investment management, valuation models of equity preference shares and debenture, fundamental and technical analysis. Further they will learn about the Portfolio management, portfolio theories and techniques of portfolio revision.

Reference Books:

1. Fischer E. Donald " Security Analysis & Portfolio Management" Prentice Hall.
2. Bhatt Sudhindra " Security Analysis Portfolio Management" Excel Books
3. Bhalla V.K. "Investment Management" Sultan Chand
4. Parsonna Chandra "Investment Analysis & Portfolio Managment"

(2022-23, 2023-24 & 2024-25)

BAFU3603T: CORPORATE FINANCIAL ACCOUNTING

Time Allowed: 3 Hrs.

Max. Marks: 100

Period per week : 6

External Assessment: 70

Pass percentage : 35%

Internal Assessment: 30

Note : Simple Calculator(not scientific) is allowed

Instructions for Paper-Setters/Examiners

The question paper covering the entire course shall be divided into three sections as follows:

SECTION-A

It will consist of essay type and numerical questions. Four questions, two theory and two numerical, shall be set by the examiner from Unit-I of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-B

It will consist of essay type and numerical questions. Four questions, two theory and two numerical, shall be set by the examiner from Unit-II of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-C

It will consist of 12 very short answer questions from entire syllabus. Students are required to attempt 10 questions up to five lines in length. Each question shall carry 3 marks; total weight of the section shall be 30 marks

Unit-I

Indian Accounting standards- Developments, Role of ASB, Progress in standard setting in India, Accounting standard 1, 2, 6, 10, 14, 17, 21 & 26

Corporate Reporting- Meaning, objectives, Recent trend in corporate reporting in India.

Value Added Accounting- Meaning, Measurement, EVA in India

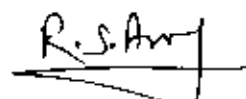
Unit-II

Accounts for holding companies. Accounts for Banking Companies, Accounts for Insurance Companies, Branch Accounting, Departmental Accounting, Accounting for co-operative societies.

Course Outcome: After completion of this course student will learn about Indian accounting standards, convergence of Indian accounting standards with international standards and corporate reporting. They will also understand about the accounts of holding companies, insurance companies and cooperative societies.

Reference Books:

1. Jyenger S.P. "Advance Accounting" Sultan Chand
2. Gupta R.L. "Advance Accounting" Sultan Chand
3. Sehgal Ashok " Advance Accounting" Taxmann Pub.
4. Meheshwari S.N. " Advance Accounting" Vikas Pub.



(2022-23, 2023-24 & 2024-25)

BAFU3604T: CONTEMPORARY AUDITING

Time Allowed: 3 Hrs.

Max. Marks: 100

Period per week : 6

External Assessment: 70

Pass percentage : 35%

Internal Assessment: 30

Instructions for Paper-Setters/Examiners

The question paper covering the entire course shall be divided into three sections as follows:

SECTION-A

It will consist of essay type questions. Four questions shall be set by the examiner from Unit-I of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-B

It will consist of essay type questions. Four questions shall be set by the examiner from Unit-II of the syllabus and the candidate shall be required to attempt two. Each question shall carry 10 marks; total weight of the section shall be 20 marks.

SECTION-C

It will consist of 12 very short answer questions from entire syllabus. Students are required to attempt 10 questions up to five lines in length. Each question shall carry 3 marks; total weight of the section shall be 30 marks

Unit-I

Auditing – Meaning, Objectives, Advantages, Classification of Audit, Internal Audit, Internal Control, Internal Check, Audit Planning, Cost Audit, Management Audit, Audit Report.

Unit-II

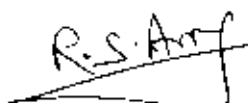
Vouching- Meaning and Importance, Vouching of Cash Transaction, Vouching of trading transaction, Verification of Assets and Liabilities.

Company Audit- Right, Duties and Liabilities of Auditor, Appointment of Auditor.

Course Outcome: This course will help the students to know the about meaning, classification of audit, internal control and internal check, cost and management audit, audit report. They will also learn about the vouching and company audit.

Reference Books:

1. Kamal Gupta " Contemporary Auditing " (Tata Mc Graw Hills),
2. Ravinder Kumar & Virender Sharma " Fundamentals of Practical Auditing" (Prentice Hall of India)
3. S.D. Sharma " Auditing (Principles & Practice" Taxman Allied Services

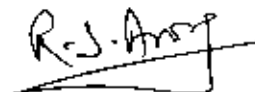


(2022-23, 2023-24 & 2024-25)

BAFU3605W: WORKSHOP ON STOCK MARKET OPERATIONS

Internal Evaluation: 50 Marks

The students will be given practical training relating to online trading. They will prepare a lab file and the evaluation will be done on the basis of practical performed by the students

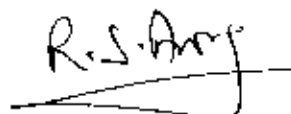
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(2022-23, 2023-24 & 2024-25)

BAFU3606V VIVA-VOCE

External Evaluation: 50 Marks

Each student will have to appear for comprehensive VIVA at the end of the year. The viva-voce will be based on the whole syllabus of 5th and 6th semester.

A handwritten signature in black ink, appearing to read "R. S. Arif", with a long horizontal line extending to the right.

BACHELOR OF VOCATION (B.Voc.)

(FOOD PROCESSING)

PROGRAMME CODE: FDPB3PUP

SYLLABUS

PART I (Semester I&II)

FOR

Session 2021-22, 2022-23, 2023-24

Under

CHOICE BASED CREDIT SYSTEM



PUNJABI UNIVERSITY, PATIALA

SYLLABUS
BACHELOR OF VOCATION (B.Voc.)
FOOD PROCESSING
 OUTLINE OF PAPERS AND TESTS
FOR

B. Voc. FOOD PROCESSING PART –I (Semester I)
PROGRAMME CODE: FDPB3PUP
Session: 2021-22, 2022-23& 2023-24

Code	Subjects	L	T	P	Total Credits*	External Marks	Internal Marks	Practical Marks	Total Marks
FDPB1101T	Punjabi –I (Qualifying)**	3	1	0	4	75	25		100 (Satisfactory /Unsatisfactory)
FDPB1102T	Introduction to computers	3	1	0	4	74	26		100
FDPB1103T	Documentation in food processing	3	0	0	3	74	26		100
FDPB1104T	Basics of Food processing	3	0	0	3	74	26		100
FDPB1105T	Dairy Processing	3	0	0	3	74	26		100
FDPB1101L	Practical Paper I pertaining to FDPB1102T			3	3			45	45
FDPB1102L	Practical Paper II pertaining to FDPB1103T			3	3			45	45
FDPB1103L	Practical Paper III pertaining to FDPB1104T			3	3			45	45
FDPB1104L	Practical Paper IV pertaining to FDPB1105T			3	3			45	45
	Industrial Visit			1	1				20
	Total General Education Component	12			12				600
QP- FIC/ Q2002 (Specific job Role)	Dairy Processing Equipment Operator Level-4/or any other qualification pack of level 4				18			Evaluation Shall be done by FICSI Result will be communicated to the university by college	

Note: *one credit =15 hrs./1 lecture of 1 hr.

** Qualifying paper marks are not included in total marks.

**BACHELOR OF VOCATION (B.Voc.)
(FOOD PROCESSING)
OUTLINE OF PAPERS AND TESTS
FOR
B. Voc. FOOD PROCESSING PART –I (Semester II)
PROGRAMME CODE: FDPB3PUP
Session: 2021-22, 2022-23& 2023-24**

Code	Subjects	L	T	P	Total Credits*	External Marks	Internal Marks	Practical Marks	Total Marks
FDPB1201T	Punjabi-II (Qualifying) **	1	1	0	4	75	25		100**
FDPB1202T	Holistic Development I: Personality Development	2	2	0	4	74	26		100
FDPB1203T	Basics of food packaging	3	0	0	3	74	26		100
FDPB1204T	Introductory Food Microbiology	3	0	0	3	74	26		100
FDPB1205T	Food products Packaging Technology	3	0	0	3	74	26		100
FDPB1206T	Drug Abuse: problem, Management and Prevention** (Qualifying)		1			70	30		100*
FDPB1201L	Practical Paper V pertaining to FDPB1202T			3	3			45	45
FDPB1202L	Practical Paper V pertaining to FDPB1203T			3	3			45	45
FDPB1203L	Practical Paper V pertaining to FDPB1204T			3	3			45	45
FDPB1204L	Practical Paper VII: pertaining to FDPB1205T			3	3			45	45
	Industrial Visit			1	1				20
	Total General Education Component	12							600
QPFIC/Q70 01 (SPECIFIC JOB ROLE)	Food Products Packaging Technician Level-5/or any other qualification pack of level 5				18			Evaluation will be done by FICSI, Result will be communicated to the university by college	

Note: *one credit =15 hrs./1 lecture of 1 hr.

** Qualifying paper marks are not included in total marks (**Qualifying paper**)

CODE: FDPB1101T	PUNJABI-I
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To download the Syllabus go to :

www.punjabiuniversity.ac.in → Important Links → Download Syllabus → Academic

Session 2021-22 → Faculty of Languages → Punjabi → Under Graduate → Under Graduate Degree Level Professional Courses Common Syllabus Punjabi or Mudla Gyan or Elementary Punjabi.

CODE: FDPB1102T

INTRODUCTION TO COMPUTERS OBJECTIVES

OBJECTIVES:

- Students will learn about operating system MS window.
- Students will gain the information about MS word, MS excel and MS power point.
- Students will evaluate implementation and applications of computers in different food industries.
- Students will practice documentation using MS word.
- Students will practice creation of tables, forms, sheets and queries using MS ACCESS.
- Students will be able to demonstrate working and applications of internet using many browsers.

Time Allowed: 3hrs;MM: 74;Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. **Operating system MS Window** -Definition & functions, Basic components of windows, types of icons, taskbar, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders. Control panel -adding and removing software and hardware, setting date and time, screen saver and appearance.
Introduction to concept of Internet: Internet applications, www, Email, ftp, web browsers(Internet explorer, Google Chrome, Mozilla).
2. **MS-Word** –Documentation, Introduction to Office Automation, Creating & Editing Document, Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Advanced features of MS-Word-Mail Merge, Macros, Tables, File Management, Printing, Styles, linking and embedding object, Template.

SECTION-B

3. **MS-Excel** - Introduction to MS-Excel, Creating & Editing Worksheet, Formatting and Essential Operations, Formulas and Functions, Charts, Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation. Database Management using Excel-Sorting, Filtering, Table, Validation, Goal Seek, Scenario.
4. **MS-PowerPoint:** Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds and insertion, Inserting Animated Pictures

REFERENCES

1. Russell A. Stultz, Learn Microsoft Office – BPB Publication
2. Microsoft Office – Complete Reference – BPB Publication
3. P.K. Sinha and P. Sinha, 2002, Foundations of Computing, First Edition, BPB.
4. Torben Lage Frandsen, Microsoft office word.
5. Word 2010 Introduction by Stephen
6. Chetan Srivastava, Fundamentals of Information Technology, Kalyani Publishers.
7. Turban Mclean and Wetbrete, 2011, Information Technology and Management, Second Edition, John Wiley & Sons.
8. Satish Jain, 1999, Information Technology, BPB.
9. V. Rajaraman, Fundamental of Computers – (Prentice Hall)
10. P. K. Sinha, Fundamental of Computers – (B.P.B publication)
11. ALEXIS LEON, Introduction to Information Systems.
12. Dr. S. Chand, Courter, G Marquis (1999). Microsoft Office 2000, Computer Fundamentals & Its Business Applications, Professional Edition. BPB.

PRACTICALS: FDPB1101L

M.M. 45

1. MS-Windows: features
2. Documentation Using MS-Word
3. Electronic Spread Sheet using MS-Excel
4. Database Management using Excel
5. Presentation using MS-PowerPoint
6. Creating tables in MS ACCESS using different ways.
7. Import and export data from MS ACCESS.
8. Creating queries in MS ACCESS
9. Creating forms in MS ACCESS
10. Working of Internet with Different Browsers (Internet Explorer, Google Chrome, Mozilla).
11. A _____

applications of Internet. (Handling Email accounts.

12. Student Have to Do Following Activities:

- a. How to create Email?
- b. How to send email?
- c. How to Download the Data?
- d. How to attach files with email?

CODE: FDPB1103T	DOCUMENTATION IN FOOD PROCESSING
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OBJECTIVES:

- Students will learn about documentation in food industry.
- Students will gain the information about programs needed to inspect raw materials in different food industries.
- Learners will come to know about applications of computer in different food industries.
- Students will learn and practice implementation, life cycle and applications of Enterprise resource planning (ERP).
- Learners will have information about primary, secondary and tertiary packaging.
- Students will perform analysis of data using statistical packages.
- Learners will practice various software used in food industry.
- Students will analyze quality of food products using ERP.

Time Allowed 3hrs;MM: 74;Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Introduction to documentation in food industry, documentation and inspection of raw material in food industry. Methods of documentation for raw material to finished product.
2. Familiarization with the application of computer in some common food industries: milk plant & fruits vegetable plants, starting from the receiving of raw material up to the storage & dispatch of finished product. Statistical analysis in food industry- application of mean, median and standard deviation in

food industry.

SECTION-B

- 3.** Introduction and implementation of ERP, application of ERP in food industry, Essential guidelines of ERP in food processing industries.
- 4.** Documentation of finished product detail- name of the product, batch number, time of packing, date of manufacture, date of expiry, other label detail, primary ,secondary and tertiary packing material for finished product, storage conditions.

REFERENCES

- 1.K.T.Patel and N.P Chotai, Apr-jun, 2011, Documentation and record: Harmonized GMP requirement, v(3).
- 2.P.J Lovett, A Ingram, C.N Bancroft, 22 November 2000, Knowledge-based engineering for SMEs- a methodology, Vol.107(1):384-389
- 3.Tufan Koc, 7 May 2007, The impact of ISO 9000 quality management system on manufacturing, Vol.186(1):207-213,
4. Inka Heidi Vilpola, 20 feb 2008, page 47-76, A Method for improving ERP implementation success by the principle and process of usercentred design.
- 5.A Rockley, 1987, Proceedings of the 34th International Technical online documentation: from proposal to finished product.

PRACTICALS: FDPB1102L

MM.: 45

1. Problem solving using spread sheet and word.
2. Use of statistical package for analysis of data
3. Application of ERP demonstrated with suitable food product.
4. Familiarization with software related to food industry.
5. Visit to industries and Knowledge of computer application in food industry.
6. Actual presentation of report in seminar.
7. Documentation of any food product along with relevant labelling.

CODE: FDPB1104T		BASICS OF FOOD PROCESSING
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OBJECTIVES

- Students will learn about the basics and requirements for processing of food.
- Learners will identify and perform different kinds of food processes such as Milling, Cooking, Boiling, Frying, Baking, Fermentation etc.
- Learners will gain knowledge about various physical food preservation methods such as High and Low temperature, Drying, Radiation.
- Students will evaluate various chemical food preservation methods such as Fermentation, Smoking and use of chemical preservatives.
- Learners will perform blanching and evaluate effects of browning on seasonal fruits and vegetables.
- Learners will demonstrate effects of heat and acidity on proteins.
- Students will perform sterilization of milk by pasteurization and its effectiveness.

Time Allowed: 3hrs; MM: 74; Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Introduction to Food Processing: Definition, Objectives, scope of food processing industries, Introduction to Different processes employed in food processing viz. Milling, Cooking, Boiling, Steaming, Braising, Stewing, Roasting, Frying, Grilling, Baking, Fermentation, Pickling, Refining.
2. Food Preservation I: Heat: Evaporation, boiling, parboiling, steam under pressure, pasteurization, blanching, canning). Low Temperature: (Thawing, refrigeration, cold storage, de-hydro freezing): Drying (Methods of drying – dehydration by Air drying, sun drying and freeze drying) Radiations: (Ultraviolet and ionizing irradiations).

SECTION-B

3. F

Food Preservation II: Preservation by fermentation – Curing and Pickling; Smoking Chemical preservatives-(Objectives, principles, types of preservatives, Different types of chemical preservatives, Safety in use and certification levels, Preservation by high osmotic pressure (Pickling, salting, curing – principles)

4. Methods in Food Processing - Microwave processing, Extrusion cooking, Ohmic Heating, Reverse Osmosis, Electro dialysis, Ultra-filtration, High Pressure Processing, Super critical fluid extraction

REFERENCES

1. Jood, Sudesh, 2002, Food Preservation, Agrotech Publisher Academy, Udaipur.
2. Potter, N.N., 2002, Food Science, CBS Publishers, ND.
3. Sethi, Mohini, 2001, Food Science, CBS Publishers, ND.
4. Srilakshmi, B., 2001, Food Science, New Age International Pvt. Ltd., ND.
5. Mahendru, S.N., 2000, Food Additives, Tata McGraw Hills, ND.
6. Manay, N.S., 2001, Foods: Facts & Principles, Wiley Eastern Ltd., ND.
7. Fellows, P., 2005, Food Processing Technology: Principles & Practices, CRC Press, Woodhead Publishing Ltd., England.
8. Chakraverty, A., 2000, Postharvest Technology of Cereals, Pulses & Oilseeds, Oxford & IBH Publishing Co. Pvt. Ltd.,
9. Wildey, R.C. Ed. 1994. Minimally Processed Refrigerated Fruits and Vegetables. Chapman and Hall, London.
10. Lewis, M.J. 1990. Physical Properties of Food and Food Processing Systems. Woodhead, UK.
11. Jelen, P. 1985. Introduction to Food Processing. Prentice Hall, Reston Virginia, USA.
12. Arsdell W.B., Copley, M.J. and Morgen, A.I. 1973. Food Dehydration, 2nd Edn. (2 vol. Set). AVI, Westport.
13. Bender, A.E. 1978. Food Processing and Nutrition. Academic Press, London.

PRACTICALS: FDPB1103L

M.M. 45

1. To blanch a seasonal fruit or vegetable & assess quality of blanching process.
2. To study the effect of browning on raw fruits & vegetables.
3. To study effect of heat and acidity on milk proteins.
4. To study the effectiveness of pasteurization.
5. To study Pasteurization of milk using microwave technique.
6. To study different methods of food processing i.e. by heat, low temperature & drying on a given food sample.
7. To check the shelf life of a given food at ambient temperature and under refrigeration.
8. Bacteriological estimation of milk by MBRT.

OBJECTIVES:

- Students will learn about the basics of dairy processing.
- Students will evaluate composition of milk, principles & methods of milk processing.
- Learners will gain awareness about microbiology of milk & milk products.
- Students will learn about processed milk products such as toned milk, flavoured milk, etc.
- Students will get the knowledge about the preparation & principles of paneer, cheese, curd, ice-cream etc.
- Students will develop understanding about the importance of dairy industries, and roles & responsibilities of a dairy product processor in a dairy plant.
- Learners will perform experiments to determine SNF%, fat content, specific gravity, TS% and casein content of milk.
- Learners will prepare various food products made from milk such as curd, cream, buttermilk, ice cream and paneer and check their quality.
- Learners will perform experiments to check sterility of milk and study various physiochemical properties and microbiological standards of milk.

Time Allowed: 3hrs; MM: 74; Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Definition of milk; Chemical composition of milk Principle and methods of milk processing (Filtration, Clarification, Pasteurization, Homogenization, Sterilization) Microbiology of milk & milk products. The process of testing milk for accepted quality standards; organoleptic testing of milk
2. Types of processed milk: pasteurized, toned, flavoured & fermented milk, infant milk, milk powder, Preparation methods and principles of Paneer, cheddar Cheese, Curd, Yoghurt Process for producing dairy products: lassi, flavoured drink, kalakand, ice-cream, butter, cooking butter, ghee, fermented milk, condensed milk

SECTION-B

3. Importance of dairy industry. Various units within a dairy processing plant. Need for processing milk. Handling and operating of machineries used in a dairy processing plant: Homogenizer, pasteurizer, sterilizer, spray drier, drum drier, plate heat exchanger, evaporators, cream separator, ice cream-freezer, Gerber centrifuge, form fill seal machine, cheese making machine and equipments
4. Roles and responsibilities of a dairy products processor in a dairy processing plant. Trends in cleaning and sanitization of dairy equipment: biological; detergents; Automation; Ultrasonic techniques in cleaning; bio-detergents, development of sanitizers- heat; chemical; radiation, mechanism of fouling and soil removal; Bio-films, assessing the effectiveness of cleaning and sanitization of dairy products.

REFERENCES

1. De, Sukumar, 1991, Outlines of Dairy Technology, Oxford Univ. Press, ND
2. Walstra, P., 2005, Dairy Technology, Oxford Univ. Press, ND. Milk & Milk Products by Eckles, Combs, Henery C, and Willes C, 1997, Tata McGraw Hill Publishers, USA.
3. Warner JN, 1976, Principles of Dairy Processing, Wiley Science Publishers, USA.
4. Herrington BL; 1948, Milk & Milk Processing; McGraw-Hill Book Company.
5. Lampert LH; 1970, Modern Dairy Products, Chemical Publishing Company.
6. Developments in Dairy Chemistry – Vol 1 & 2; Fox PF; Applied Science Pub Ltd.
7. Outlines of Dairy Chemistry, De S; Oxford.
8. Richardson and Mead. 1999. Poultry meat science.
9. Pearson and Tauber. 1989. Muscle and meat biochemistry.
10. Pearson and Dutson. 1994. Quality attributes and their measurement in meat poultry
11. Romans. JR and Costillo WJ, Carlson WC, Greaser ML and Jones KW, 2004, The Meat We Eat, Interstate Publishers, USA

PRACTICALS: FDPB1104L

M.M.45

1. Determination of specific gravity, SNF % and TS% of milk.
2. Estimate the milk fat by Gerber method.
3. To determine the Casein content of the milk.
4. To check the sterility of milk by Turbidity test.
5. To prepare a chart of physico-chemical properties and microbiological standards of milk and milk products.
6. Preparation of dahi, cream, buttermilk and paneer.
7. T_____

- o prepare ice cream, testing of its quality
- 8. Phosphatase test to check pasteurization of milk.
- 9. Platform tests of milk like organoleptic tests, clot on boiling test, alcohol test, pH and % acidity test- Alizarin Alcohol test.
- 10. Detection of various adulterants and neutralizer in milk
- 11. To determine percentage of overrun of ice-cream.
- 12. Analysis of ice cream for fat, % acidity, total solids, foreign fat
- 13. Demonstration on form fill seal machine
- 14. To study various parts of cream separator
- 15. To analyze quality of butter and ghee sample
- 16. Preparation and quality valuation of spray dried milk
- 17. Bacteriological estimation of milk by MBRT

CODE: FDPB1201T	PUNJABI-II (Qualifying)
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CODE: FDPB1202T	HOLISTIC DEVELOPMENT I-PERSONALITY DEVELOPMENT
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OBJECTIVES:

- Student will identify the Personality Patterns, Personal Effectiveness and Personality Determinants.
- Students will evaluate Interpersonal Relations, Analysis of Relations of different ego states and Analysis of Strokes.
- Student will learn the importance of stress management and time management.
- Learners will perform individual and group activities to combat stress and anger.
- Learners will practice collaborative learning and undergo interactive sessions for time management.
- Students will experience empirical learning for personality traits and perform various tests of personality.
-

Time Allowed: 3hrs; MM: 74; Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER: The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Personality: Meaning & Concept, Personality Patterns, Symbols of Self, Moulding the Personality Pattern. Personality & Personal Effectiveness. Personality Determinants: An overview of Personality determinants. Evaluation of Personality: Sick Personalities and Healthy Personalities.
2. Introduction to Interpersonal Relations, Analysis of Relations of different ego states, Analysis of Strokes, Analysis of Life position, Introduction to Motivation, Relevance and types of Motivation, Motivating others

SECTION-B

3. Stress Management: Introduction to Stress, Causes of Stress, Impact of Stress, Managing Stress, Conflict Management: Introduction to Conflict, Causes of Conflict, Managing Conflict
4. Time Management: Time as a Resource, Identify Important Time Management Wasters, Individual Time Management Styles, Techniques for better time management.

REFERNCES

1. Lall& Sharma – Personal Growth Trainning& Development (Excel Books)
2. Janakiraman- Trainning& Development (Biztantra)
3. Hurlock., Elizabeth B - Personality Development (Tata McGraw Hill, 1st Ed.)
4. Sahu R..K. - Training for Development (Excel Books, 1st Ed.)
5. Prof. Achhru Singh & Dr. Dharminder Singh Ubha, Personality Development and Soft Skills.
6. Petri, H.L. and Govern, J.M., 2013, Motivation: Theory, Research, and Applications, (sixth edition) Wadsworth Cengage Learning: Belmont CA.
7. Stephen Robbins, Organisational Behaviour .
8. Keith & Davis, Organisational Behaviour.
9. Fred and Luthans, Organisational Behaviour.
10. K.A. Ashwatthapa, Organisational Behaviour.

PRACTICALS: FDPB1201L

M.M.45

1. Group activities + individual activities to resolve stress and conflict.
2. Collaborative learning for time management.
3. Interactive sessions based on time management.
4. Ensure Participation for personality development
5. Empirical Learning for personality traits.
6. To perform different personality tests
7. Personality Inventory administration.
8. Adjustment Inventory administration.

CODE: FDPB1203T

BASICS OF FOOD PACKAGING

OBJECTIVES:

- Students will learn about the basics of food packaging and designing of packages for various foods.
- Students will evaluate various packaging materials such as cellulose films, plastic films, aluminium foils and laminations.
- Students will develop knowledge of food packages bags, pouches, carton boxes, metal cans, and plastic & glass containers.
- Student will have understanding of packaging methods such as vacuum, gas, shrink and retort pouches, polyvinylchloride, polystyrene and inert gas packaging.
- Student will learn and practice packaging of cereals, fruits, vegetables, milk and milk products.
- Learners will conduct experiments to determine grease resistance and chemical resistance, water paper transmission rate and porosity of different packaging materials.
- Learners will evaluate the shelf life of packaged food.

Time Allowed: 3hrs; MM: 74; Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

Section-A

1. Packaging - Introduction, Food Protection, functions of package, design of packages for various foods. Development of protective packaging- paper and paper boards.
2. Regenerated cellulose film, plastic films, Aluminium foils and laminations. Edible packaging, Food packages bags, pouches, carton boxes, metal cans, plastic containers, glass containers.

Section-B

3. Special packaging methods- vacuum and gas packaging, shrink package, retort pouches, Biodegradable

packages. Flexible packaging materials: polyethylene, cellophane, PVC, Polystyrene, Inert gas packaging.

4. Packaging of cereals, fruits and vegetables, milk and milk products and meat and meat products.

REFERENCES

1. Sachrow & Griffin, "Food packaging".
2. Heiss R., "Principles of food packaging".
3. Paine E.A, "Fundamentals of packaging".
4. Day P.T., "Packaging of food beverages".
5. Brody AL, "Flexible packaging of Foods".
6. Gordon L. Robertson. Marcel Dekker. 1993, Food Packaging: Principles and Practice.
7. M. T. Crosby, Food Packaging Materials.
8. M. Mahadevish R.V. Gowramma, Food Packaging Materials.
9. Stanley Sacharow, Food Packaging.

PRACTICALS: FDPB1202L

M.M: 45

1. To determine grease resistance of packaging materials.
2. Determination of water vapour transmission rate of various packaging materials.
3. To find out the porosity of tin plate.
4. To find out the tin coating weight.
5. To find out the uniformity and amount of wax on wax paper.
6. To see the chemical resistance of packaging material.
7. Shelf life studies of packaging foods.
8. Puncture resistance of corrugated boxes.
9. Visit to various industries, dealing with food packaging materials like / paper, board and m

CODE: FDPB1204T	INTRODUCTORY FOOD MICROBIOLOGY
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OBJECTIVES:

- Students will learn the uses of microorganisms for preparation of various types of foods such as bread, c

urd etc.

- Students will gain awareness about the interaction between microorganism and the food environment and factors influencing the growth and survival.
- Students will develop knowledge about the characteristics of food borne, waterborne spoilage microorganism and methods for their isolation, detection and identification.
- Students will evaluate the effects of fermentation in food production and its influences on the quality and status of food.
- Students will practice different standard methods and procedures for the microbiological analysis of food.
- Students will be able to demonstrate the working of autoclave, laminar airflow and microscope.
- Students will perform cleaning and sterilization of plastic ware and glassware.
- Students will prepare and sterilize nutrient media.
- Students will perform culturing of microbes on media and identify their morphological features using various staining methods.

Time Allowed: 3hrs; MM: 74; Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Introduction to Food Microbiology ,Important terms related to Food Microbiology , physical, chemical and microbiological parameters for hygienic production of food, Safety Regulations for the Food Microbiology Laboratory
2. Types of microorganisms, Classification and Nomenclature ,Morphology and Structure and their importance in food (bacteria, fungi, viruses, molds, yeast), Microscopy, use of compound microscope,

SECTION-B

3. Microbial Growth in Food , Microbial Growth Characteristics- Bacterial growth curve Factors affecting the growth of micro-organisms, Sources of Microorganisms in foods, list of Some important food spoilage bacteria. Changes caused by micro-organisms
4. Cultivation of Micro-organisms : Methods of isolation and cultivation, Pure culture techniques (Streak plate, spread plate and serial dilution method), Hygienic handling of Food

PRACTICALS: FDPB1203L

M.M. 45

1. Introduction to Food Microbiology and Laboratory Safety
2. Use of autoclave, Laminar air flow/ Functioning and use of compound microscope
3. Cleaning and sterilization of glassware
4. Preparation and sterilization of nutrient broth
5. Cultivation and sub-culturing of microbes
6. Preparation of slant, stab and plates using nutrient agar
7. Morphological study of bacteria and fungi using permanent slides
8. Simple staining, Gram Staining, Negative staining
9. Standard Plate Count of Milk and Foods
10. Heat, Cold and Other Stress Factors Affecting Microbial Growth
11. Isolation and Identification of *Escherichia coli*

REFERENCES

- 1) Frazier William C and Westhoff, Dennis C. Food Microbiology, TMH, New Delhi, 2004
- 2) Jay, James M. Modern Food Microbiology, CBS Publication, New Delhi, 2000
- 3) Garbutt, John. Essentials of Food Microbiology, Arnold, London, 1997
- 4) Pelczar MJ, Chan E.C.S and Krieg, Noel R. Microbiology, 5th Ed., TMH, New Delhi, 1993
- 5) Essentials of Microbiology; K. S. Bilgrami; CBS Publishers, Delhi
- 6) Basic Food Microbiology; Bannett, Chapman and Hall
- 7) Food Microbiology; M. R. Adams 7. Hand Book of Microbiology; Bisen

CODE: FDPB1205T	FOOD PRODUCTS PACKAGING TECHNOLOGY
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OBJECTIVES:

- S

tudents will identify different types and categories of packaging material.

- Students will gain the information about packaging requirements for various food products.
- Students will acquire knowledge about evaluation of quality and safety of packaging materials.
- Students will learn about Food Safety Standards and Regulations.
- Students will have the knowledge about developments in food packaging materials.

Time Allowed: 3hrs; MM: 74; Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Types of packaging material and categories of packaging material, Types of packaging material used for packing various food products, Packaging requirements and their selection for raw and processed foods : Meat, fish, poultry, eggs : Milk and dairy products : Fruits and vegetables : Cereal grains and baked food products : Beverages : Snacks
2. Forms of packaging – box, bottle, tetra, pouch, shrink, vacuum, gas, CAP, MAP, aseptic etc. process parameters for all categories of packaging for each product, Selection of packaging material and design, Evaluation of quality and safety of packaging materials – different testing procedures. Brief Introduction to WVTR, GTR, bursting strength, tensile strength, tearing strength, drop test, puncture test, impact test

SECTION-B

3. Packaging Machinery: Bottling, can former, form fill and seal machines, bags – their manufacturing and closing, vacuum packs unit, shrink pack unit, tetra pack unit , Package labelling – functions and regulations,
4. Newer packaging technologies- CAP/MAP packaging, aseptic processing and packaging, irradiated packaging, retort pouch, microwaveable packaging, packaging standards and legislation in food packaging materials, knowledge on Food Safety Standards and Regulations (as per FSSAI), recent developments in food packaging materials.

REFERENCES

1. Gordon L. Robertson. Marcel Dekker. 1993 Food Packaging: Principles and Practice.
2. Potter, N.N. Food Science, 2006, CBS Publishers 5th Ed., SBS Publishers, New Delhi.
3. Sethi, M. 2001, Food Science CBS Publishers, ND.
4. Crosby, M. T. Food Packaging Materials.
5. M. Mahadevish, M., Gowramma. R.V. Food Packaging Materials
6. Stanley Sacharow. Food Packagin 7..E.A. Paine, Fundamentals of packaging.
8. P.T. Day, Packaging of food beverages.
9. A.L. Brody, Flexible packaging of Foods.

PRACTICALS: FDPB1204L

M.M: 45

1. Identification of different types of packaging and packaging materials
2. Identification of different types of packaging and packaging materials.
3. To perform different destructive and non- destructive test for glass containers.
4. Determination of tensile strength of given material.
5. Determination of tearing strength of paper
6. Determination of water vapour transmission rate.
7. Determination of drop test of food package.
8. Visit to food packaging industries.
9. To demonstrate vacuum and shrink packaging.
10. Demonstrate the intelligent packaging.
11. Measurement of thickness of packaging materials
12. D

etermination of wax weight

13. To perform grease-resistance test in plastic pouches
14. Determination of bursting strength of packaging material
15. Demonstration of can-seaming operation
16. Testing of chemical resistance of packaging materials
17. Show videos of latest trends in packaging consulting websites.

CODE: FDPB1206T	DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION
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**COMMON FOR ALL UNDERGRADUATE DEGREE COURSES PART-I(SEMESTER-II)
QUALIFYING SUBJECT-DRUG ABUSE:PROBLEM, MANAGEMENT AND PREVENTION**

PUNJABI UNIVERSITY,

PATIALA, PUNJAB, INDIA

(Established under Punjab Act No. 35 of 1961)



Syllabi

for

**BACHELOR OF VOCATION (B. Voc.)
(FOOD PROCESSING)**

PART 2 (Semester III & IV)

PROGRAMME CODE: FDPB3PUP

FOR

Session 2022-23, 2023-24, 2024-25

Under

CHOICE BASED CREDIT SYSTEM

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PUNJABI UNIVERSITY, PATIALA

BACHELOR OF VOCATION (B. Voc.) FOOD PROCESSING

OUTLINE OF PAPERS AND TESTS

FOR

B. Voc. FOOD PROCESSING PART –II (Semester III)

PROGRAMME CODE: FDPB3PUP

Session: 2022-23, 2023-24 & 2024-25

CODE	SUBJECTS	L	T	P	Total credits* One credit = 15hrs./1 Lecture of 1hr.	External Marks	Internal Marks	Practical Marks	TOTAL MARKS
FDPB 2101T	Communication skills	3	1	0	4	75	25		100
FDPB 2102T	Introduction to Grain Milling and Machineries	3	1	0	4	74	26		100
FDPB 2103T	Fundamentals of Food Biochemistry	3	0	0	3	74	26		100
FDPB 2104T	Introduction to Cereal and Legume Processing	3	0	0	3	74	26		100
FDPB 2105T	Fundamentals of food and nutrition	3	0	0	3	74	26		100
FDPB 2101L	Practical paper IX (pertaining to FDPB2102T)			3	3			45	45
FDPB 2102L	Practical paper X (pertaining to FDPB2103T)		0	3	3			45	45
FDPB 2103L	Practical Paper XI (pertaining to FDPB2104T)			3	3			45	45
FDPB 2104L	Practical Paper XII (Pertaining to FDPB2105T)			3	3			45	45
	Industrial Visit			1	1				20
	Total General Education Component				12				700
QP- FIC/Q10 01 (SPECIFIC JOB ROLE)	Chief Miller Level-6/for any other qualification pack of level 6 (Level 6 is of two semesters therefore evaluation shall be done after IV semester)				18				
					Evaluation will be done at the end of IV Semester by FICSI Result will be communicated to the university by college				

[Signature]

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PUNJABI UNIVERSITY, PATIALA

BACHELOR OF VOCATION (B. Voc.) FOOD PROCESSING

OUTLINE OF PAPERS AND TESTS

FOR

B. Voc. FOOD PROCESSING PART -II (Semester IV)

PROGRAMME CODE: FDPBPUP

Session: 2022-23, 2023-24 & 2024-25

CODE	SUBJECTS	L	T	P	TOTAL CREDITS* *one credit =15 hrs./1 lecture of 1 hr	External Marks	Internal Marks	Practical Marks	TOTAL MARKS
FDPB22 01T	Environmental & Road Safety Awareness (Qualifying/ as per University rules*)	3	1	0	4	70	30		100*
FDPB22 02T	Holistic Development II: Physical Training	3	1	0	4	74	26		100
FDPB22 03T	Food Spoilage and Control	3	0	0	3	74	26		100
FDPB22 04T	Quality Control and Regulations	3	0	0	3	74	26		100
FDPB22 05T	Fruits and vegetables Processing	3	0	0	3	74	26		100
FDPB22 01L	Practical Paper XIII pertaining to FDPB2202T			3	3			45	45
FDPB22 02L	Practical Paper XIII pertaining to FDPB2203T		0	3	3			45	45
FDPB22 03L	Practical Paper XIV pertaining to FDPB2204T		3	3	3			45	45
FDPB22 04L	Practical Paper XV: pertaining to FDPB2205T		3	3	3			45	45
	Industrial Visit			1	1				20
	Total General Education Component				12				600
QPEI 01 (SPECIFIC JOB ROLE)	Chief Miller/Food microbiologist/ Quality Assurance Manager/ Level-6/or any other qualification pack of level 6				18			Evaluation will be done by FICSI. Result will be communicated to the university by college	

* marks are not included in total marks. (Qualifying paper)

SYLLABUS
FOR

B. Voc. FOOD PROCESSING

PART –II (Semester III)



Code: FDPB2101T	Communication Skills-I
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Max. Marks: 75

Total lectures: 60 hrs.

English communication Skills has been designed to develop the student's communicative competence in English. Therefore, content selection is determined by the student's present and future academic, social and professional needs.

Texts Prescribed:

1. Literary Skills: Flights of Fancy (Poems 1-15)–Bakshish Singh(editor)
2. Writing Skills: The Written Word - Vandhana R. Singh

Section –A (Literary)

Attempt Any Two

1. One essay type question based on main ideas/summary of poems from “FLIGHTS OF FANCY” in about 250 words. (15 marks)
2. Short answer questions. Five to be attempted out of the given eight questions in about 50-60 words each. (5 x 3 = 15 marks)
3. Use of 15 words out of given 20 words in sentences after giving their meanings. (15 marks)
4. Explain two stanzas with reference to the context. (7.5 x 2 = 15 marks)

Section- B (Writing Skills)

Attempt Any Two

1. Letter writing (personal) (15 marks)
2. Developing one short story based on hints provided. (15 marks)
3. Writing two short passages on the given topics (Current Economic, Political and Sports Affairs). (15 marks)
4. Make 15 dialogues from a given prose passage. (15 marks)

Section- C

Attempt All

This section will cover the entire syllabus. All ten very short questions to be attempted in onesentence each. (10 x 1.5 = 15 marks)

Code: FDPB2102T	Introduction to Grain Milling and Machineries
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OBJECTIVES

- Students will gain information about the general principles and working of grain milling machinery.
- Students will learn and evaluate various properties of different flours such as moisture content, gluten content, protein content, alcoholic acidity, water absorption capacity and ash content.
- Students will identify the traditional and latest pretreatment methods in this area.
- Students will acquire knowledge about the modern and improved milling machinery utilized in the milling industries.
- Learners will undergo visit to flour and rice mills for hands on experience.

Time Allowed 3 hrs;

MM: 74;

Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Milling of Wheat: milling preconditioning, cleaning, washing and drying, operation flow charts of domestic and commercial atta chakies, mini flour mills and roller flour mills. Modern flour mill: General Principles and machine operations – break system, reduction system, sifting, purification, flour bagging and storage and flour treatment
2. Types of maize. Milling of corn. Methods of cleaning, grading, milling. Standards for wheat flour. Production of different wheat and corn product. adulteration in flour.

SECTION-B

3. Dal milling: pre milling treatments of pulses, pulse milling and recent development. Principle of dal milling. Pulses suitable for milling. different methods of dal milling. working and principle of dal mill, pre-treatment in dal milling
4. Working with grain milling machinery: hammer mill, Groundnut decorticator hand operated, mini dal mill, mini rice mill, mini oil expeller, grain cleaner, mini grain mill, wheat flour mill, micro pulverizer and destoner

REFERENCES:

1. Kent, N.L. and Evers, A.D. 4th Edition. 1983, Technology of Cereals, Woodhead Publishing Limited, U.K.
2. Maiz, S.A. 1996, The Chemistry and Technology of Cereals as Food and Feed, CBS Publishers, New Delhi.
3. Potter, N.N. 5th Ed. 2006, Food Science, SBS Publishers, New Delhi.
4. Arota, M. 2020, Practical Manual Food Processing, Bachelor of Vocation Food processing: Part II: Semester III Nirai prakashan, Pune.
5. Durbey, S.C. 1979. Basic Baking: Science and Craft Gujarat Agricultural University, Anand(Gujrat).
6. Chakraverly, A. 1988. Post-Harvest Technology of Cereals. Pulses and Oilseeds, Oxford and IBH, New Delhi.
7. Ruth H. Matthews (1989). Pulses- Chemistry, Technology and Nutrition, Marcel Dekker Inc. USA
8. Chapman and Hall (1992). The chemistry and technology of cereals as food and feed.

PRACTICAL (FDPB2101L)

M.M. 45

1. Milling of Wheat flour.
2. Determination of Gluten content in wheat/corn flour sample.
3. To determine water absorption capacity of wheat flour/maida
4. Determination of adulterant (NaHCO_3) in wheat flour/maida
5. Determination of alcoholic acidity of the sample of wheat flour/maida
6. Visit to a working modern roller flour mill and FCI godowns.
7. Determination of wet and dry gluten of a given flour sample
8. Visit to working rice mill, collection of samples at various steps of milling and analysis for efficiency of cleaning, shelling, paddy separator and degree of polish
9. Traditional and improved pretreatments and its effect on dehiscing of some legumes
10. Estimation of moisture content of different flour using hot air oven method
11. Determination of ash content of flour.

Code: FDPB2103T	Fundamentals of Food Biochemistry
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OBJECTIVES

- Students will learn about the biochemistry of carbohydrates and proteins.
- Students will develop knowledge about enzymes: classification, features, activity, inhibition, and application of enzymes in food industry.
- Students will acquire knowledge about lipid peroxidation and its mechanism, and antioxidant types and functions.
- Students will gain awareness about food additives and their importance in food industry.
- Learners will perform experiments to determine TSS, acidity, pH, acid value, vitamin C content, protein content, fat content and ash content of given food sample.

Time Allowed 3hrs

MM: 74

Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. **Carbohydrates:** Changes in carbohydrates on cooking, browning and Maillard reaction, metabolic pathways (Glycolysis). Proteins: Sources of proteins; Enzymatic and non-enzymatic browning, Texturization- spin and extrusion process.
2. **Enzymes:** Enzymes classification, Enzyme specificity, coenzymes, cofactors, factors affecting enzyme activity, Enzyme kinetics, Lineweaver-Burk plot, Enzyme inhibition and application of enzymes in food technology.

SECTION-B

3. **Lipid peroxidation:** Mechanism and inhibition-enzymatic and non-enzymatic, antioxidants in foods; Types and function.
4. **Food additives:** Flavor enhancers (monosodium glutamate, 5-nucleotides and malol). Pigments: Introduction and significance of natural pigments in food - Chlorophylls, Carotenoids, Anthocyanins, Flavonoids, Tannins.

REFERENCES:

1. G.A. Tucker and L.F.J. Woods, 1995, Enzymes in Food Processing, Blackie Academic & Professional, USA.
2. H.D. Belitz, W. Grosch and P. Schieberle, Springer Verlag, Berlin (2004), Food Chemistry.
3. D.D. Miller, Wiley-Blackwell, 2014, Food Chemistry: A Laboratory Manual, USA .
4. L.W. Aurand, A.E. Woods and M.R. Wells, 1987, Food Composition and Analysis, AVI Publishers, USA .
5. D.W.S. Wong, Chapman & Hall, UK (1995), Food Enzymes: Structure & Mechanism.
6. N.N. Potter and J.H. Hotchkiss, Springer, Netherlands 1999, Food Science.
7. M.I. Gurr, J.L. Harwood and K.N. Frayn, 2002, Lipid Biochemistry: An Introduction, Blackwell Science Ltd., UK.
8. J.M. de Man, 1999, Principles of Food Chemistry, AN ASPEAN Publication, USA.

PRACTICAL (FDPB2102L)

M.M. 45

1. Determination of TSS value of given food product.
2. Determination of acidity of food products.
3. Determination of pH of food product.
4. Determination of acid value in given oil.
5. Estimation of salt content in given food stuff.
6. Determination of vitamin C by titration method.
7. Determination of Protein by Kjeldhal method.
8. Determination of fat by Soxhlet apparatus.
9. Qualitative estimation of sugars.
10. Determination of ash content.

Code: FDPB2104T	Introduction to Cereal and Legume Processing
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OBJECTIVES

- Students will learn about the structure and chemical composition of cereals such as wheat and rice.
- Students will gain knowledge about role of wheat flour milling, extraction rate and milling systems.
- Students will develop knowledge about structure and chemical composition of pulses and pre-treatments of pulses before milling.
- Student will experience working of machinery and equipment's employed in milling industry and traditional milling process.
- Learners will perform milling of wheat flour and determination of its gluten content.
- Learners will prepare chapatis, bread, cakes, biscuits and fried snacks.
- Students will identify different pulses and prepare germinated foods.
- Students will practice parboiling of rice and malting of barley.

Time Allowed 3hrs

MM: 74

Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Structure and chemical composition of cereals – Wheat and Rice
2. Wheat flour milling, extraction rate and milling systems. Improvers and bleaching used in flour. Milling and preparation of Paddy, Rice Bran Oil. Parboiling of rice

SECTION-B

3. Introduction and brief description of pulses, Structure and chemical composition of pulses (moong, mash, lentil, gram beans, cowpea), Pretreatments given to pulses before milling.
4. Working of machinery and equipment employed in milling industry. Traditional milling process- merits and demerits, Drying of legumes- sun drying, pre-cleaning, oil application, conditioning, dehulling and splitting. Grinding of split pulses, pulse flour products and their applications.

REFERENCES:

1. Kent, N.L. and Evers, A.D. 4th Edition. 1983, Technology of Cereals, Woodhead Publishing Limited, U.K.
2. Maiz, S.A. 1996, The Chemistry and Technology of Cereals as Food and Feed, CBS Publishers, New Delhi.
3. Potter, N.N. 5th Ed. 2006, Food Science, SBS Publishers, New Delhi.
4. Durbey, S.C. 1979. Basic Baking: Science and Craft Gujarat Agricultural University, Anand(Gujrat).
5. Chakraverty, A. 1988. Post-Harvest Technology of Cereals. Pulses and Oilseeds, Oxford and IBH, New Delhi.
6. Ruth H. Matthews (1989). Pulses- Chemistry, Technology and Nutrition, Marcel Dekker Inc. USA
7. Chapman and Hall, 1992, The chemistry and technology of cereals as food and feed.

PRACTICAL (FDPB2103L)

M.M. 45

1. Milling of Wheat flour.
2. Determination of Gluten.
3. Preparation of chapatis, bread, biscuits and cakes.
4. Parboiling of Rice
5. Determination of crude fiber, ash, protein and fat.
6. Study of maling of Barley.
7. Identification and description of common pulses.
8. Preparation of fried snacks and baked goods
9. Preparation of germinated foods.
10. Visit to food industry



Code: FDPB2104T	Fundamentals of Food and Nutrition
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OBJECTIVES

- Students will learn definition and classification of food.
- Students will develop understanding about carbohydrates, proteins, fats, vitamins and minerals.
- Students will have information about nutritive value of different food groups.
- Students will gain knowledge about effects of deficiency & overconsumption of different nutrients.
- Learners will interpret nutritional information in different packed foods available in the market.
- Learners will conduct experiments to determine iodine value, acid value, saponification value and lipid composition of wheat grain.
- Students will perform qualitative and quantitative determination of carbohydrates and proteins in food.
- Students will evaluate and prepare diet chart for normal physiological conditions.
- Students will identify Dietary allowances and standards for adult man/woman, pre-school children, adolescents, old age people and athletes

Time Allowed 3hrs

MM: 74

Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Introduction to Food: Definition, classification, and constituents of food: Carbohydrates, Fats, Proteins, Fat soluble vitamins- (A, D, E and K) Water soluble vitamins – (Thiamin, Riboflavin, Niacin, Pyridoxine, Folate, Vitamin B12 and Vitamin C) Minerals – (Calcium, Iron, Zinc, Iodine and Flourine).
2. Nutritional Concept in Food Design: Nutritive values of cereals, pulses, oil seeds, fruits vegetables, fish, meat, and eggs

SECTION-B

3. Functions of food, Effect of deficiency & overconsumption of dietary sources on health, Basic food groups, Recommended Dietary Allowance (RDA), Food guide pyramid,

Dietary fibers, Functions of water in body. . Balanced Diet: Definition, food groups used in planning balanced diets.

4. Nutrition: Basic terms used in nutrition, relationship between food, health and nutrition, bioavailability of nutrients. Basal Metabolic Rate (BMR). Protein quality, Dietary allowances, and standards for different age groups: adult man/woman, pre-school children, adolescent children, pregnant woman. geriatric nutrition, nutrition for athletes

REFERENCES:

1. N. Shakuntala Manay & M. Shadaksharaswamy Food Facts and Principles by New Age International (P) Ltd. Publishers.
2. N. Potter & J. Hotchkiss, Food Science CBS Publisher and Distributors.
3. Manoranjan Kalia and Sagita Sood, Food Preservation and Processing by Kalyani Publishers.
4. Shubhangini Joshi, Nutrition and Dietetics Tata McGraw Hill Co. Ltd.
5. M. Swaminathan, Vol-I Food and Nutrition , Bangalore Printing and Publishing Co.
6. Gopalan C, Rama Sastri BV, Balasubramanian SC. 1989. Nutritive Value of Indian Foods. National Institute of Nutrition, ICMR, Hyderabad.
7. Wardlaw and Insel MG, Insel PM. 2004. Perspectives in Nutrition. Sixth Edition, McGraw Hill.
8. Srilakshmi B 2012. Nutrition Science. 4th Revised Edition, New Age International Publishers.
9. Khanna K, Gupta S, Seth R, Passi SJ, Mahana R, Puri S. Textbook of Nutrition and Dietetics. Phoenix Publishing House Pvt. Ltd.
10. ICMR. 2010. Recommended Dietary Allowances for Indians. Published by National Institute of Nutrition, Hyderabad
11. Antia, F.P. and Abraham, P. 2011: Clinical Dietetics and Nutrition, Fourth Edition, Oxford University Press.
12. Joshi, V.D. 2005: Handbook of Nutrition and Dietetics, Vora Medical Publications, Mumbai.
13. Masih, S. 2011. Essentials of Food and Nutrition, Lotus Publishers.
14. Sharma, R. 2011: Diet Management, Fourth Edition, Elsevier, A Division of Reed Elsevier India Private Limited.

PRACTICAL (FDPB2104L)

M.M. 45

1. To study nutritional information in different packed foods available in the market.
2. Estimation of iodine value of fats and oils.
3. Determination of acid value of fat.
4. Estimation of saponification value of fat.
5. Lipid composition of wheat grain.
6. Qualitative and quantitative determination of carbohydrates in food
7. Qualitative and quantitative determination of proteins in food
8. Planning of diet chart for normal physiological conditions.
9. Preparation of scrap files showing overconsumption and deficiency of different food components.

SYLLABUS

B. Voc. FOOD PROCESSING

PART –II (Semester IV)



20/11/24

Code: FDPB2201T	Environmental & Road Safety Awareness
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COMMON FOR ALL UNDERGRADUATE DEGREE COURSES PART-II
(SEMESTER-IV)

QUALIFYING SUBJECT: ENVIRONMENTAL & ROAD SAFETY AWARENESS



Code: FDPB2202T Holistic Development-II (Physical Training)

OBJECTIVES

- Students will develop understanding about sports relationships and sports performance in India.
- Students will gain knowledge about sports injuries and first aid, sports psychology and anxiety.
- Learners will identify and evaluate rules and regulations of different games such as badminton, discuss throw and high jump.
- Learners will perform the measurement and preparation of the field.
- Students will identify different requirements for game such as equipment's, materials and technique.
- Students will be able to demonstrate duties of officials, knowledge of score sheet and signals of officiating.

Time Allowed 3hrs

MM: 74

Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. **Sports relationship:** Role and importance of sports and economy, sports and politics.
2. **Sports performance:** Causes and remedial measures of India's poor performance in Sports.
3. **Sports injuries:** - Causes symptoms, first aid, treatment and prevention of (Sprain, Strain, contusion, dislocation & fracture).
4. **First Aid:** -Meaning, principles and qualities of first aider. First aid for dislocation, burns, electric shock, drowning and heat stroke.

SECTION-B

5. **Sports Psychology:** -Meaning and Importance in Physical education and sports and competition. Psychological factors affecting physical performance.
6. **Anxiety and Aggression:** Meaning and remedial measure of anxiety and aggression in sports.
7. **Badminton:** History, layout, General rules and regulation, officials, Major tournaments, and Arjuna awardees.
8. **Discuss Throw:** Rules and regulations, Layout and Technique.
9. **High Jump:** Rules and regulations, Layout and Technique.

REFERENCES:

1. Kang G.S. Deol N.S, 2008, An introduction to Health and Physical Education, 21st Century, Patiala.
2. Blair, Jones, and Simpson; 1962, Educational Psychology, The Macmillan Co., New York,
3. Lindgren, H.E., 1962, Educational Psychology in the class Room, John Wiley & Sons,
4. Whiting HTA; 1972, Reading in sports Psychology, Henry Kimpton Publisher, London.
5. Dhalwal, A.S. Vidyak Manovidyan, Patiala. Punjab University.
6. Puri, A.T. 1980, Sports Psychology: An abridged translation by G.S. Sandhu, NIS Patiala.
7. Suin, R.M, 1982., Psychology in Sports, Methods and applications, Surjit Publications, New Delhi.
8. Ajmer Singh and Jagtar Singh, 2004, Gill; Essentials of Physical education and Olympic movement, Kalyani Publishers, Ludhiana..
9. Swami Siranander: 1978, The Science of Paranyama, Divine life society P.O. Shivananda Nagar.Dist. Tehri Garhwal, U.P.
10. Yogendra, 1975, Facts about, Kovalaya, Dhama, Lonavala Bombay
11. Bucher Olsen and Willgoose; 1976, The Foundation of Health, Prentice Hall Inc. Englewood Cliffs, New Jersey.
12. Turner Sellery and Smith, 1961, School Health and Health Education. The C.V. MOS by Company St.Louis.
13. Ajmer Singh and Jagtar Gill, 2004, Essential of Physical Education and Olympic Movement. Kalyani Publishers, Ludhiana.
14. Arora, M. 2020, Practical Manual Food Processing. Bachelor of Vocation Food processing: Part II: Semester IV Nirali Prakashan, Pune.
15. G.S.Kang:-Anatomy, Physiology and Health Education, Published by Publication Bureau, Punjab University, Patiala.

PRACTICAL (FDPB2201L)

M.M. 45

BADMINTON, DISCUSS THROW and HIGH JUMP

Evaluation will be based on skill test, performance & viva voce. Contents to be covered during the practical sessions:

- 1 Measurement of the field and preparation of the field.
- 2 Equipment and Materials of the game/ Event.
- 3 Fundamental skill and lead up game techniques.
- 4 Rules and Regulations of the game/ Event.
- 5 Officiating:
 - (i) Duties of officials.
 - (ii) Knowledge of score sheet.
 - (iii) Signals of officiating

Code: FDPB2203T Food Spoilage and Control

OBJECTIVES

- Students will learn about various components of microscope and its principle.
- Students will gain information about spoilage of food by various microorganisms.
- Students will have knowledge about food adulteration.
- Students will evaluate major causes of food spoilage such as various physical, chemical and microbiological.
- Students will develop knowledge about bacterial and non-bacterial food born diseases.
- Learners will develop understanding about laboratory orientation and familiarization with various laboratory instruments.
- Learners will perform various techniques to isolate and identify microorganisms from food samples.
- Students will practice drying /Freezing of given food material.

Time Allowed 3hrs

MM: 74

Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Microscope and microscopy -Principles and types of different microscopes, staining and staining techniques, Control of microorganisms, Control of enzymes & other factors.
2. Food preservation; Principles and methods of food preservations (Physical; Drying, Freezing, Irradiation& Chemicals; Nitrites, Nitrates Sulphites, Sulphates and Antibiotics); Food adulteration, methods of evaluation of food adulterants

SECTION-B

3. Food Contamination and spoilage: Major Causes of food spoilage (Physical, Chemical and Microbiological) Spoilage of fruits and vegetables, meat and meat products, fish, eggs, milk and milk products and canned foods.

(Handwritten signature and initials)

4. Food borne Diseases: Bacterial food borne diseases (*Salmonella*, *Enterohemorrhagic E. coli*, *Listeria monocytogenes*, *Staphylococcus aureus*, *Clostridium botulinum*, *Clostridium perfringens*, *Bacillus cereus*), Nonbacterial Food borne diseases (Mycotoxin, Aflatoxin, Patulin, Ochratoxin).

REFERENCES:

1. James M Jay, Modern Food Microbiology , CBS Publishers New Delhi
2. Pelczar, Chan & Krieg; Microbiology, Tata-McGrawHill Pub
3. Stanier, R.Y. Adelberg, E.A. and Ingraham, J.L. (1984), General Microbiology, IV edn MacMillan Press.
4. Prescott. L.M. Harley J.P. and L. Kreig D.A. (1990). Microbiology, WCB Publishers.

PRACTICAL (FDPB2202L)

M.M. 45

1. Laboratory orientation and familiarization with Laminar air flow, analytical balance, oven, incubator, colony counter, autoclave, laboratory shaker
2. Demonstration of compound microscope
3. To perform simple, negative, grams staining techniques
4. To perform streak plate and spread plate techniques
5. Isolation of microorganism from food samples.
6. To perform drying /Freezing of given food material.
7. To analyze adulterants in given food material.

Code: FDPB2204T Quality Control and Regulations

OBJECTIVES

- Students will learn about good laboratory practices and Good manufacturing practices.
- Students will have knowledge about role and importance of different food regulatory authorities in India.
- Students will evaluate the need, scope and limitations of labeling and its components, regulation of labeling of irradiated products and organic foods, legal issues involved in labeling, and basics of Indian drug and cosmetics Act.
- Student will gain knowledge about biosafety guidelines for research.
- Learners will identify and evaluate ISO 22000 certified Indian companies.
- Learners will gain awareness about concept of HACCP, FSSAI-2006 and GMP.

Time Allowed 3hrs

MM: 74

Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Good laboratory practices and good manufacturing practices. Safety practices in the production areas.
2. Role of regulatory authorities in India - functioning, legal acts and their enforcements
Concept of HACCP - Hazard assessment, ISO 22000 regulations, FSSAI-2006, BIS, AGMARK & FDA

SECTION-B

3. Need, scope and limitations of labelling - components of labelling and regulations of labelling of irradiated products, organic foods, Legal issues involved, Indian drug and cosmetics Act.
4. Biosafety guidelines for research, environmental aspects of GMOs, handling and disposal of laboratory organisms.

REFERENCES:

1. Bare Act, Indian Patent Act 1970 Acts & Rules, Universal Law Pubs. Ltd., 2007.
2. Information Solution Pvt.Ltd., 2007.
3. G.C. McLaujlin, Total Quality in Research and Development.
4. Ralph Early, Guide to Total Quality Management.
5. Feighan Baum., Total Quality Management.
6. Duncan, Total Quality Management.
7. J. Woodali, Total Quality in Information Systems and Technology.
8. R Early, Blackie Academic, NY, 1995, Guide to Quality Management Systems for the FoodIndustry.
9. Kankanala C., Genetic Patent Law & Strategy, 1st Edition, Manupatra

PRACTICAL (FDPB2203L)

M.M. 45

1. A brief about ISO 22000 certified Indian companies.
2. To study the concept of HACCP.
3. To study the essential elements of GMP.
4. To study biosafety guidelines.
5. To study the safety practices in production area.
6. Study of FSSAI-2006.



Code: FDPB2205T	Fruits and Vegetable Processing
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OBJECTIVES

- Students will identify and classify various types and classification of fruits and vegetables.
- Students will understand the physiological changes occurring in fruit and vegetables during harvesting and storage.
- Students will familiarize with processing techniques used for fruits and vegetables.
- Students will establish the quality specification for the processing of fruit and vegetables.
- Students will develop a detailed understanding of the different fruits and vegetables techniques like canning, freezing, drying, pickling and squash making.
- Learners will prepare jams, jellies, juices, pickles, tomato ketch-up, sauce, chutney, potato chips and finger chips from fruits and vegetables.
- Students will evaluate organoleptic properties of fruits & vegetables.
- Learners will determine firmness, moisture content, starch content, TSS and viscosity of different fruits and vegetables.

Time Allowed 3hrs

MM: 74

Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Chemical composition, post harvest changes, Preparing fruits and vegetables for processing.
2. Natural, Ventilated and controlled atmosphere storage, Low temperature storage, Fruit & Vegetable processing plant layout and processing line, Fruit & Vegetable product quality standards & quality control measures.

SECTION-B

3. Chemical composition, post-harvest changes, Preparing fruits and vegetables for processing.
4. Natural, Ventilated and controlled atmosphere storage, Low temperature storage, Fruit & Vegetable processing plant layout and processing line, Fruit & Vegetable product quality standards & quality control measures.

REFERENCES:

1. Srivastava, R.P. and Kumar, S. 1998. Fruit and Vegetable preservation: Principles and Practices. 2nd Ed. International Book Distributing Co. Lucknow.
2. Salunkhe, D. K. and Kadam, S.S. Ed. 1995. Handbook of vegetable Science and Technology, Production, Composition, Storage and Processing. Marcel Dekker, New York.
3. Dauby, M.E. 1997. Fruit and Vegetable processing. International book Distributing Co. Lucknow, India.
4. Lai, G. Siddappa, G. and Tondon, G. L. 1986. Preservation of Fruit and Vegetables, Indian Council of Agricultural Research, New Delhi

PRACTICAL (FDPB2204L)

M.M. 45

1. Preparation of jams and jellies from different fruits.
2. Extraction and preservation of Fruit Juices.
3. To prepare different types of pickles (sweet & sour).
4. Organoleptic evaluation of fruit & vegetable products.
5. Estimation of Ascorbic Acid content spectrophotometrically.
6. Determination of Brix : Acid ratio of fruits and vegetable products
7. Testing Pectin in fruit juices and pulp.
8. Drying by different methods of fruits and vegetables.
9. Preparation of tomato ketch-up, sauce & chutney.
10. Preparation of potato chips, finger chips Utilization of waste for preparation of different products like vinegar, starch, pectin.
11. Determination of firmness of seasonal fruit by penetrometer.
12. Determination of moisture content of processed fruit/vegetable product.
13. Determination of starch content of apples/potatoes.
14. Determination of total soluble solids by refractometer.
15. Determination of viscosity of different food products.

PUNJABI UNIVERSITY,

PATIALA, PUNJAB, INDIA

(Established under Punjab Act No. 35 of 1961)



Syllabi

for

**BACHELOR OF VOCATION (B.Voc.)
(FOOD PROCESSING)**

PART 3 (Semester V & VI)

PROGRAMME CODE: FDPB3PUP

FOR

Session 2022-23, 2023-24, 2024-25

Under

CHOICE BASED CREDIT SYSTEM

9/11

SCHEME & SYLLABUS

BACHELOR OF VOCATION (B. Voc.) FOOD PROCESSING

**OUTLINE OF PAPERS AND TESTS
FOR**

B. Voc. FOOD PROCESSING PART -III (Semester V)

PROGRAMME CODE: FDPB3PUP

Session: 2023-24, 2024-25 & 2025-26

CODE	SUBJECTS	L	T	P	Total Credits*	External Marks	Internal Marks	Practical Marks	Total Marks
					*One credit =15 hrs./1 lecture of 1 hr.				
FDPB3101T	Communication Skills II	3	1	0	4	75	25		100
FDPB3102T	Marketing and Retail Management	3	1	0	4	74	26		100
FDPB3103T	Sugar Processing Technology	3	0	0	3	74	26		100
FDPB3104T	Food Industry Waste Management	3	0	0	3	74	26		100
FDPB3105T	Entrepreneurship Development in Food Processing	3	0	0	3	74	26		100
FDPB3101L	Practical paper XVII Pertaining to Paper FDPB3102T			3	3			45	45
FDPB3102L	Practical Paper XVIII pertaining to Paper FDPB3103T	0	3	3	3			45	45
FDPB3103L	Practical Paper XIX pertaining to Paper FDPB3104T		3	3	3			45	45
FDPB3104L	Practical Paper XX pertaining to paper FDPB3105T		3	3	3			45	45
	Industrial Visit		1	1	1			20	20
	Total				30				700

SCHEME & SYLLABUS

BACHELOR OF VOCATION (B. Voc.) FOOD PROCESSING

**OUTLINE OF PAPERS AND TESTS
FOR**

B. Voc. FOOD PROCESSING PART -III (Semester VI)

PROGRAMME CODE: FDPB3PUP

Session: 2023-24, 2024-25 & 2025-26

Code	Subjects	L	T	P	Total Credits* *one credit =1Shrs/1 lecture of 1hr.	External Marks	Internal Marks	Practical Marks	Total Marks
FDPB3201L	Industrial Training/Institutional Project			12	30	-----	-----	-----	200
QP7	QP Production Manager/or any QP of level7			18		Evaluation will be done by FICSI Result will be communicated to the university by college			
	Total				30				200

• **Distribution of marks will be according to ordinance no. 18**

Project work will be of 200 marks based on three categories:

1. Performance and Practical: 100 marks
2. Project Report: 50 marks
3. Viva Voce : 50 marks

Signature

Signature

SYLLABUS

B. Voc. FOOD PROCESSING PART –III (Semester V)

Code:FDPB3101T	Communication Skills II
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Max. Marks: 75 Lectures to be delivered: 75

COURSE CONTENT

The course content shall compromise the following books:

1. *Perspectives: Selections from Modern English Prose and Fiction*, edited by S.A. Vasudevan and M. Sathya Babu, Published by Orient Longman.
2. *Six One-Act Plays*, edited by Maurice Stamford. Published by Orient Longman.

TESTING

The paper shall have two sections. Section-A shall comprise testing from *Perspectives: Selections from Modern English Prose and Fiction* while Section-B from *Six One-Act Plays*.

SECTION-A: PERSPECTIVES

Q. 1. Based on the section entitled "Prose", comprising chapters I to VI.

- a) One essay-type question with internal alternative. The answer should not exceed 250 words. 10 Marks
- b) Five short-answer questions to be attempted out of seven. Each answer should be written in 25 to 30 words. 5 X 2=10 Marks

Q. 2. Based on the section entitled "Fiction", comprising chapters VII to IX.

- (a) One essay type question with internal alternative on character/theme and incident/episode. The answer should not exceed 250 words. 10 Marks
- (b) There will be one short answer question from each of the three stories. The candidate shall be required to attempt any two. Each answer should be written in 25 to 30 words. 2 X 2½=5 Marks

Q. 3. Based on the section entitled "Biographies", comprising chapters X to XII.

- (a) One essay-type question with internal alternative. The answer should not exceed 250 words. 10 Marks
- (b) There will be one short answer question from each chapter. The candidate shall be required to attempt any two. Each answer should be written in 25 to 30 words. 2 X 2½=5 Marks

SECTION-B: SIX ONE-ACT PLAYS

Q. 4

- (a) One essay-type question on character, incident/episode and theme, with internal alternative. The answer should not exceed 250 words. 15 Marks
- (b) Five short-answer question to be attempted out of seven. Each answer should be written in 25-30 words. 5X2=10 Marks

Code: FDPB3102T

Marketing and Retail Management

OBJECTIVES

- Students will learn about the marketing process and strategic planning of food processing industries in the world.
- Students will gain information about the marketing environment, consumer markets, consumerbuyer behaviour, rural and urban industrial marketing.
- Students will gain knowledge about role of advertising, promotion, product and service strategies.
- Student will develop understanding about product, brand and sales management.
- Students will identify trends in retailing, communication and customer relations.
- Learners will identify different branded food items and determine their qualitative and quantitative comparison.
- Learners will conduct survey and prepare a report on consumer behavior with respect to a particular product.
- Learners will identify parameters of customer satisfaction.
- Students will prepare industrial unit set up for a product.

Time Allowed 3hrs;

MM: 74;

Pass Percentage: 35%

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt two questions each from sections A and B of the questionpaper and the entire section C.

SECTION-A

1. Marketing in FPI in the global world, strategic planning and the marketing process, the marketing environment, consumer markets and consumer buyer behavior Rural Marketing, industrial Marketing
2. Marketing strategy – Overview, advertising and promotion, Product and services strategy, Pricing products, Distribution and supply chain management channels, Direct and online marketing, competitive strategies

20/1

20/1

SECTION-B

3. Product and Brand Management, consumer buying behavior, Sales Management and sales promotion, Food product handling and transportation
4. Place of Retailing in the Marketing Mix, Trends in retailing, Communication and Customer Relations, Managing People at Work - Recruitment and Motivation, Total Quality Management, product development, globalization in food industries

REFERENCES

1. Robert Reeder, Edward G, Industrial Marketing – Analysis, Planning and Control.
2. Krishna K. Havildar, Industrial Marketing , Tata McGraw Hill
3. Jagdish Sheth & G shainesh, Customer Relationship Management,
4. Michael Levy, Retailing Management. 5.SwapnaPradhan, Retailing Management – Text & Cases.
5. Gibson Vedamani, Retail Management.
6. Walker and Larreche, Marketing Strategy – Boyd,Mc Graw Hill Irwin
7. David Aaker, Strategic Market management, John Wiley& sons
8. George Belch, San Diego University Michael Belch. Advertising and Promotion: An Integrated Marketing Communications Perspective, San Diego University
9. Rajeev Batra, John G. Myers, David A. Aaker, Advertising Management.
10. Schiffman & Kanuk, Consumer Behavior, 6th edition Prentice Hall India
11. Loudon & Della Bitta, Consumer Behavior, 4th edition Tata McGraw Hill 13.Suja R Nair, Consumer Behaviour in Indian Context, Himalaya Pub. House.
12. Arora, M. 2020, Practical Manual Food Processing. Bachelor of Vocation Food processing: Part II: Semester III Nirali Prakashan, Pune.
13. Hawkins Best & Coney, Consumer Behavior building marketing strategy, 7th edition McGraw Hill International edition

PRACTICAL (FDPB3101L)

M.M.45

1. To collect different branded food items and their qualitative and quantitative comparison.
2. To conduct survey and prepare a report on consumer behavior with respect to a particular product.
3. To study parameters of customer satisfaction.
4. To plan for industrial unit set up for a product.
5. To study advantages & disadvantages of on line shop



Code:FDPPB3103T

SUGAR PROCESSING TECHNOLOGY

OBJECTIVES

- Students will learn about the properties of sugarcane and sugar beet.
- Students will gain information about different sugar production processes.
- Students will develop understanding about the techniques and instruments involved in preparation of different confectionary products.
- Students will prepare or manufacture different sugar products such as coffee, fudge, chewing gum etc.
- Learners will conduct experiments to determine acidity, ash content, and moisture content of sugar products.

Time Allowed 3hrs;

MM: 74;

Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION A

1. **Introduction** Sugarcane and sugar beet as sugar raw materials. Flow charts for manufacture of Granulated sugar and Liquid sugars. Properties of Granulated sucrose and Liquid Sugars. Invert sugar and their characteristics. Specialty products of Sugar Industry. Back strap Molasses and its uses. Applications in animal feed.
2. **Sugar production processes:** Extraction of juice, extraction yields, drying and uses of Bagasse, Purification of juices -Juice filtration and chemical purification, Clarification stages, Lime addition, pH control, Treatment of clarified juice, evaporation –multiple effect evaporators, Vacuum pans, Crystallization, Washing of sugar crystals and centrifugal separation/dewatering of sugar and other related processes. Sugar Refining, Sugar analysis, Sugar recovery – improvement, Sugar balance, energy conservation, Sugar plant sanitation.

2024/25
2024/25

SECTION B

3. **Technology of Confectionery manufacture:** General technical aspects of industrial sugar confectionery manufacture, Manufacture of high boiled sweets – Ingredients, Methods of manufacture – Types – Center – filled, lollipops, coextruded products, Manufacture of gums and jellies – Quality aspects
4. **Technology of Chocolate manufacturing and Miscellaneous Products:** Chocolate manufacturing ingredients and their role as food additives, Machineries involved in the process of manufacturing chocolates, Caramel, Toffee and fudge-Licorice paste and aerated confectionary, Lozenges, sugar panning and chewing gum

TEXT BOOKS

1. E.B. Jackson, 1999, Sugar Confectionery Manufacture, Second edition, Aspen publishers Inc., Great Britain
2. Guilford L Spencer and George P. Made, 1993, Cane Sugar Hand Book, John Wiley and sons Inc. London
3. P. Manohara Rao: Industrial Utilization of Sugar Cane and its co-products. P. J. International Consultants, New Delhi

REFERENCES

1. Maurice Shachman, Soft Drinks Companion: (2005). A Technical Handbook for the Beverage Industry, CRC press, Florida, USA.
2. W. Ray, Junk & Harry M. Pancost: (1973), Hand Book of Sugars – for Processors, Chemists and Technologists: AVI Publishing, West port.
3. Oliver Lyle: (1950), Technology of Sugar for Refinery Workers Chapman and Hall Ltd.

PRACTICAL (FDPB3102L)

M.M. 45

1. Determination of sugar content in juice.
2. Determination of reducing and non-reducing sugars in sugar product.
3. To prepare chocolate
4. To prepare candy and jelly from fruit sources.
5. To study the equipment's related to sugar manufacturing.
6. To determine ash content of sugar product.
7. To determine moisture content of sugar product.
8. To estimate acidity and TSS of sugar products.

Code: FDPB3104T

FOOD INDUSTRY WASTE MANAGEMENT

OBJECTIVES

- Student will learn about classification & characterization of food industrial waste from dairy, fruit & vegetable processing etc.
- Students will gain information about waste disposal method, economical aspects of waste treatment etc.
- Students will evaluate different treatment methods for liquid waste etc.
- Student will acquire knowledge about treatment methods for solid waste, biogas and effluent waste treatment method.
- Learners will conduct experiments to determine BOD and COD of water sample.
- Learners will conduct experiments to find the TDS and TSS.
- Students will prepare flow process chart of food plant waste utilization processes

Time Allowed 3hrs;

MM: 74;

Pass Percentage: 35 %

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Introduction: Classification and characterization of food industrial wastes from Fruit and Vegetable processing industry, Beverage industry; Fish, Meat & Poultry industry, Sugar industry and Dairy industry; Waste disposal methods – Physical, Chemical & Biological; Economical aspects of waste treatment and disposal.
2. Treatment methods for liquid wastes from food process industries; Design of Activated Sludge Process, Rotating Biological Contactors, Trickling Filters, UASB, Biogas Plant.

SECTION-B

3. Treatment methods of solid wastes: Biological composting, drying and incineration, Design of Solid Waste Management System: Landfill Digester, Vermicomposting Pit. Biofilters and Bioclarifiers, Ion exchange treatment of waste water, Drinking-Water treatment, Recovery of useful materials from effluents by different methods.

27/1

Qd

4. Utilization from rice mill - Thermal and biotechnological uses of rice husk - pyrolysis and gasification of rice, utilization of rice bran, citric acid production from fruit waste, Coconut processing – by-product utilization – fuel briquette .

REFERENCES:

1. V. Oreopoulou, W. Russ, (ed), 2007, "Utilization of by-products and treatment of waste in the foodindustry" Vol, 3, Springer.
2. K. Waldron, 2007, "Handbook of waste management and co-product recovery in foodprocessing".CRC.
3. R. Smith, J. Klemes, J-K Kim 2008, "Handbook of water and energy management in food processing.", CRC.
4. C. Yapijakis, L.Wang, Yung T-se-Hung,2005. . Waste treatment in the food processing industry, H.L.O, CRC,
5. Herzka A & Booth RG; 1981, Applied Science Pub Ltd, Food Industry Wastes: Disposal and Recovery
6. Fair GM, Geyer JC & Okun DA; 1986, John Wiley & Sons, Inc.
7. Bartlett RE; . Water & Wastewater Engineering; Applied Science Pub Ltd.
8. Green JH & Kramer A; 1979, Food Processing Waste Management; AVL
9. Rittmann BE & McCarty PL; 2001, Environmental Biotechnology: Principles and Applications, Mc-Grow-Hill International editions.
10. Bhattacharyya B C & Banerjee R; Environmental Biotechnology, Oxford University Press.
11. P. N. Chereminoﬀ& A.C Morresi, 1976, "Energy from Solid Wastes" 12 .A. Chakravarthy & De, "Agricultural Waste and By Product Utilisation".
13. Bor S. Luli (ed), "Rice Production and Utilisation"
14. E. Beagle, "Rice Husk Conversion to Energy"

PRACTICAL (FDPB3103L)

M.M. 45

1. To find BOD of water sample.
2. To find COD of waste sample.
3. To find the total dissolved solids (TDS) and its volatile and non-volatile components.
4. To find the total suspended solids (TSS) and its volatile and non-volatile components.
5. Flow process chart of food plant Waste utilization processes
6. To find the phenol content of water sample and evolution of parameters.
7. To operate the electro dialysis apparatus.
8. To find the biodegradation constant (K) and the effect of timing on it.
9. To use the membrane separation techniques for salt brine and reverse osmosis process for sugar.

Code: FDPB3105T	ENTREPRENEURSHIP PROCESSING	DEVELOPMENT IN FOOD
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OBJECTIVES

- Students will learn about definition and requirements to be an entrepreneur.
- Students will identify competencies of entrepreneurs.
- Students will get the information about NABARD, NSIC, SIDBI, DIC, DIO, SFC, TCO and other governmental organizations that promote entrepreneurship.
- Students will evaluate about planning a small scale unit.
- Students will gain knowledge about project identification and requirements to start a business.

Time Allowed 3hrs;

MM: 74;

Pass Percentage: 35%

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Section A and B will have four questions from the respective sections of the syllabus and carry 11 marks each. Section C will consist of 15 short answer type questions which will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt two questions each from sections A and B of the question paper and the entire section C.

SECTION-A

1. Entrepreneurship: definition, requirements to be an entrepreneur, entrepreneur and intrapreneur, entrepreneur and manager, growth of entrepreneurship in India, women entrepreneurship, rural and urban entrepreneurship, competencies of entrepreneurs-(1) Decision Making (2) Problem Solving (3) Risk Taking (4) Leadership (5) Communication (5) Dealing with customers.
2. Entrepreneurial Support System: National Bank for Agriculture and Rural Development(NABARD), National Small Industries Corporation (NSIC), Small Industries Development Bank of India (SIDBI) Role of District Industries Centre, Directorate /Commissioner of Industries Office, State Financial Corporation, Technical Consultancy Organization.

2021

2021

SECTION-B

3. Food processing Sector in India: An overview, Make In India: (Sector Food Processing Policy, Financial Support, Investment Opportunities), MOFPI: (Schemes), FICSI: (Overview) , MSME:(Schemes and Entrepreneurship development programs)
4. Planning a small scale unit: Whom to approach for what, Project Identification, requirements to start a business, SSI registration, obtaining NOC from state pollution control board, The National Institute for Entrepreneurship and Small Business Development (NIESBUD)- Entrepreneurship Development Institute of India (EDII) Science and Technology Entrepreneurship Parks (STEPS) -Use of IT enabled services in entrepreneurship - E Licensing, E filing.

REFERENCES

1. P. C. Jain Handbook for New Entrepreneur Oxford Latest Edition
2. S. S. Khanka Entrepreneurial Development S. Chand Latest Edition
3. Thomas W. Zimmerer & Norman M. Scarborough Essentials of Entrepreneurship and small businessmanagement 4th Edition
4. Dr. VidyaHattangadi2007, Entrepreneurship Himalaya.
5. Vasant Desai 2008, Small Scale Industries and Entrepreneurship Himalaya.
6. Dr. v. B. Angadi, Dr. H. S. Cheema & Dr. M. R. Das, 2009, Entrepreneurship, Growth, and EconomicIntegration-A linkage Himalaya.
6. Roy Rajeev, Entrepreneurship Oxford Latest Edition
7. E. Gordon & K.Natarajan, 2008, Entrepreneurship Development Himalaya.
8. Coulter Entrepreneurship inaction PHI 2nd Edition

PRACTICAL (FDPB3104L)

M.M. 45

1. Test to assess the Entrepreneurial spirit of learner through questionnaire (EntrepreneurialSelf-Assessment Tool)
2. Demonstrate and practice five core life skills
 - (A) Managing self and others
 - (B) Positive Attitude
 - (C) Creativity
 - (D) Team building
 - (E) Motivation
3. A SWOT analysis of entrepreneurial opportunity in your locality with reference to the vocational course.
4. Show videos of successful entrepreneurs.
5. Prepare a list of agencies providing financial support and make a chart for their guidelines.
6. Prepare checklist of legal, technical and other administrative requirements to setup a small scale food processing unit.

PUNJABI UNIVERSITY PATIALA

SYLLABUS

FOR

B.A. (Sociology) Part II

(Pass and Honours)

SESSION 2021-2022, 2022-2023 & 2023-24

(SEMESTER III & IV)

REGULAR/ DISTANCE EDUCATION /PRIVATE STUDENT



PUNJABI UNIVERSITY PATIALA

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Namanta
Incharge
Department of Sociology &
Social Anthropology
Punjab University Patiala

SOCIOLOGY B.A.PART II (THIRD SEMESTER)
SESSION 2021-2022, 2022-2023 & 2023-24
FOR REGULAR/ DISTANCE EDUCATION /PRIVATE STUDENT

For Regular Students: Each paper will carry 70 marks and 30 marks of Internal Assessment.

The Break-up of 30 Marks for Internal Assessment (Theory Papers) is as below:

1. Test	12 Marks
2. Class Attendance	06 Marks
3. Field Work / Project Work/Assignment/ Response Sheet/Seminar etc.	12 Marks

TOTAL MARKS	30 Marks
-------------	----------

Paper-I Social Structure of Indian Society

FOR DISTANCE EDUCATION AND PRIVATE STUDENT EACH PAPER
WILL CARRY 100 MARKS AND THERE WILL BE NO INTERNAL
ASSESSMENT.

FOR REGULAR STUDENTS

MAXIMUM MARKS: 100

TIME ALLOWED: 3HRS

INTERNAL ASSESSMENT: 30

EXTERNAL ASSESSMENT: 70

FOR DISTANCE EDUCATION AND PRIVATE STUDENTS

MAXIMUM MARKS: 100

INSTRUCTIONS FOR THE PAPER-SETTER

For **Regular Students**, the question paper will consist of three sections A, B and C. Sections A and B will have four questions from the respective sections of the syllabus and will carry 10½ marks each. Section C will consist of 14 short-answer type questions, which will cover the entire syllabus uniformly and will carry 28 marks in all. Each short-answer type question will carry two marks each. Thirty (30) marks will comprise of internal assessment.

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For Distance Education and **Private Students**: The question paper will consist of three sections: A, B and C. Sections A and B will have four questions from the respective sections of the syllabus and will carry 14½ marks each. Section C will consist of 14 short-answer type questions, which will cover the entire syllabus uniformly and will carry 42 marks in all. Each short-answer type question will carry 3 marks each.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is compulsory.

SECTION A

- i) Social Stratification: bases and forms; social differentiation.
- ii) Theories of Social Stratification : (Max Weber, Davis and Moore, Karl Marx)
- iii) Caste in India: Concept, features and changing patterns.
- iv) Class in India: Concept and bases; caste and class.

SECTION B

- i) Marriage and Family in India: Concept, Types and changing patterns.
- ii) Gender discrimination; Changing Sex Ratio: Causes and consequences
- iii) Features of Societal Organization in India: Tribal, Rural
- iv) Urban Organization in India and Rural-Urban Migration.

BOOKS RECOMMENDED

1. Bhatnagar, G.S. and Baldev Singh Rehal 1997. *Bharati Samaj*, Patiala: Punjabi University.
2. Bottomore, T.B. 1972. *Sociology: A Guide to Problems and Literature*, Bombay: George Allen and Unwin.
3. Chaudhary, R.K. 1986. *Caste and Power Structure in Village India*, New Delhi: Inter India Publishers.
4. Desai, A.R. 1990. *Rural Sociology in India*, Bombay: Popular Prakashan.

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5. Dube, S.C. 1990. *Indian Society*, New Delhi: National Book Trust. (Punjabi Translation also available. Translated by G. S. Arshi and published by NBT)
6. Johnson, Harry M. 1996. *Sociology: A Systematic Introduction*, Delhi: Allied Publishers. (Hindi translation also available. Translated by Yogesh Atal and published by Kalyani Publishers, Ludhiana)
7. Kapadia, K.M. 1972. *Marriage and Family in India*, London: Oxford University Press.
8. Kaur, Savinderjit 1987. *Samaj Vigyan De Mool Sankalp*, Patiala: Punjabi University Press.
9. Kuppaswamy, B. 1982. *Social Change in India*, New Delhi: Vikas Publishing House.
10. Majumdar, and T.N. Madan 1997. *An Introduction to Social Anthropology*, NOIDA: Mayur Paperbacks
11. Sharma, K.L. 1997. *Social Stratification in India: Issues and Themes*, New Delhi: Sage Publishers.
12. Srinivas, M.N. 1995. *Social Change in Modern India*, New Delhi: Orient Longman.
13. Kaur, Savinderjit. *Samaj Vigyan naal jaan pehchan part-ii*, New Academic Compney, Maai Hira Gate. Jalandhar.
14. Sandhu, Jasmeet. 2016. *Marriage and Family in India*. New Delhi: Rawat Publications.
15. Collins: Dictionary of Sociology.
16. Oxford: Dictionary of Sociology.

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ਸੈਸ਼ਨ 2021-2022, 2022-2023 & 2023-24
B.A. II SOCIOLOGY
ਰੈਗੂਲਰ/ਪ੍ਰਾਈਵੇਟ/ਡਿਸਟੈਂਸ ਐਜੂਕੇਸ਼ਨ ਵਿਦਿਆਰਥੀਆਂ ਲਈ

ਸਮੈਸਟਰ ਤੀਜਾ
ਪੇਪਰ ਭਾਰਤੀ ਸਮਾਜ ਦੀ ਸਮਾਜਕ ਬਣਤਰ

PAPER-I SOCIAL STRUCTURE OF INDIAN SOCIETY

ਸਮਾਂ: 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 70

ਪਾਸ ਨੰਬਰ: 25

ਡਿਸਟੈਂਸ ਐਜੂਕੇਸ਼ਨ ਅਤੇ ਪ੍ਰਾਈਵੇਟ ਵਿਦਿਆਰਥੀਆਂ ਲਈ 100 ਨੰਬਰ ਦਾ ਪੇਪਰ ਅਤੇ ਕਿਸੇ ਤਰ੍ਹਾਂ ਦੀ ਵੀ ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ ਨਹੀਂ ਹੈ।

ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ

ਰੈਗੂਲਰ ਵਿਦਿਆਰਥੀਆਂ ਲਈ ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਤਿੰਨ ਭਾਗਾਂ ਓ, ਅ, ਅਤੇ ਏ ਵਿੱਚ ਵੰਡਿਆ ਹੋਇਆ ਹੈ। ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਚਾਰ ਸਵਾਲ ਦਿੱਤੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਦੋ ਸਵਾਲ ਕਰਨੇ ਹੋਣਗੇ ਜਿਹੜੇ ਕਿ 10½ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਏ ਭਾਗ ਵਿੱਚ ਛੋਟੇ ਉੱਤਰ ਵਾਲੇ 14 ਪ੍ਰਸ਼ਨ ਹੋਣਗੇ, ਜਿਹੜੇ ਸਾਰੇ ਸਿਲੇਬਸ ਨੂੰ ਕਵਰ ਕਰਦੇ ਹੋਣਗੇ। ਹਰ ਸਵਾਲ 2 ਅੰਕਾਂ ਦਾ ਹੋਵੇਗਾ। ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ 30 ਨੰਬਰਾਂ ਦੀ ਹੋਵੇਗੀ।

ਡਿਸਟੈਂਸ ਐਜੂਕੇਸ਼ਨ ਅਤੇ ਪ੍ਰਾਈਵੇਟ ਵਿਦਿਆਰਥੀਆਂ ਲਈ ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਤਿੰਨ ਭਾਗਾਂ ਓ, ਅ, ਅਤੇ ਏ ਵਿੱਚ ਵੰਡਿਆ ਹੋਇਆ ਹੈ। ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਚਾਰ ਸਵਾਲ ਦਿੱਤੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਦੋ ਸਵਾਲ ਕਰਨੇ ਹੋਣਗੇ ਜਿਹੜੇ ਕਿ 14½ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਏ ਭਾਗ ਵਿੱਚ ਛੋਟੇ ਉੱਤਰ ਵਾਲੇ 14 ਪ੍ਰਸ਼ਨ ਹੋਣਗੇ, ਜਿਹੜੇ ਸਾਰੇ ਸਿਲੇਬਸ ਨੂੰ ਕਵਰ ਕਰਦੇ ਹੋਣਗੇ। ਹਰ ਸਵਾਲ 3 ਅੰਕਾਂ ਦਾ ਹੋਵੇਗਾ।

ਪਰੀਖਿਆਰਥੀ ਲਈ ਹਦਾਇਤਾਂ

ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਦੋ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ ਵਿਦਿਆਰਥੀ ਵੱਲੋਂ ਦਿੱਤਾ ਜਾਵੇਗਾ। ਭਾਗ "ਏ" ਦੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਜ਼ਰੂਰੀ (compulsory) ਹਨ।

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ਭਾਗ (ੳ)

- i) ਸਮਾਜਕ ਦਰਜੇਬੰਦੀ : ਅਧਾਰ ਅਤੇ ਰੂਪ, ਸਮਾਜਕ ਵਖਰੇਵਾਂ
- ii) ਸਮਾਜਕ ਦਰਜੇਬੰਦੀ ਦੇ ਸਿਧਾਂਤ (ਮੈਕਸ ਵੈਬਰ, ਡੇਵਿਸ ਐਂਡ ਮੂਰ, ਕਾਰਲ ਮਾਰਕਸ)
- iii) ਭਾਰਤ ਵਿਚ ਜਾਤ (ਪੈਟਰਨਜ਼) : ਸੰਕਲਪ, ਲੱਛਣ/ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਅਤੇ ਬਦਲਦੇ ਰੂਪ
- iv) ਭਾਰਤ ਵਿਚ ਵਰਗ : ਸੰਕਲਪ ਅਤੇ ਅਧਾਰ; ਜਾਤ ਅਤੇ ਵਰਗ

ਭਾਗ (ਅ)

- i) ਭਾਰਤ ਵਿਚ ਵਿਆਹ ਅਤੇ ਪਰਿਵਾਰ : ਸੰਕਲਪ, ਕਿਸਮਾਂ ਅਤੇ ਬਦਲਦੇ ਰੂਪ (ਪੈਟਰਨਜ਼)
- ii) ਲਿੰਗ ਵਿਤਕਰਾ; ਲਿੰਗ ਅਨੁਪਾਤ ਵਿਚ ਬਦਲਾਅ : ਕਾਰਨ ਅਤੇ ਨਤੀਜੇ
- iii) ਭਾਰਤ ਵਿਚ ਸਮਾਜਕ ਸੰਗਠਨ : ਕਬਾਇਲੀ, ਪੇਂਡੂ
- iv) ਭਾਰਤ ਵਿਚ ਸ਼ਹਿਰੀ ਸਮਾਜਕ ਸੰਗਠਨ ਅਤੇ, ਪੇਂਡੂ ਸ਼ਹਿਰੀ ਪ੍ਰਵਾਸ

BOOKS RECOMMENDED

1. Bhatnagar, G.S. and Baldev Singh Rehal 1997. *Bharati Samaj*, Patiala: Punjabi University.
2. Bottomore, T.B. 1972. *Sociology: A Guide to Problems and Literature*, Bombay: George Allen and Unwin.
3. Chaudhary, R.K. 1986. *Caste and Power Structure in Village India*, New Delhi: Inter India Publishers.
4. Desai, A.R. 1990. *Rural Sociology in India*, Bombay: Popular Prakashan.
5. Dube, S.C. 1990. *Indian Society*, New Delhi: National Book Trust. (Punjabi Translation also available. Translated by G. S. Arshi and published by NBT)
6. Johnson, Harry M. 1996. *Sociology: A Systematic Introduction*, Delhi: Allied Publishers. (Hindi translation also available. Translated by Yogesh Atal and published by Kalyani Publishers, Ludhiana)
7. Kapadia, K.M. 1972. *Marriage and Family in India*, London: Oxford University Press.
8. Kaur, Savinderjit 1987. *Samaj Vigyan De Mool Sankalp*, Patiala: Punjabi University Press.
9. Kuppaswamy, B. 1982. *Social Change in India*, New Delhi: Vikas Publishing House.

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10. Majumdar, and T.N. Madan 1997. *An Introduction to Social Anthropology*, NOIDA: Mayur Paperbacks
11. Sharma, K.L. 1997. *Social Stratification in India: Issues and Themes*, New Delhi: Sage Publishers.
12. Srinivas, M.N. 1995. *Social Change in Modern India*, New Delhi: Orient Longman.
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14. Sandhu, Jasmeet. 2016. *Marriage and Family in India*. New Delhi: Rawat Publications.
15. Collins: Dictionary of Sociology.
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SESSION 2021-2022, 2022-2023 & 2023-24

B. A. II (PASS)

Semester IVth

PAPER-II: SOCIAL CHANGE IN INDIA

FOR DISTANCE EDUCATION AND PRIVATE STUDENTS EACH PAPER
WILL CARRY 100 MARKS AND THERE WILL BE NO INTERNAL
ASSESSMENT

FOR REGULAR STUDENTS

MAXIMUM MARKS: 100

TIME ALLOWED: 3 HRS

INTERNAL ASSESSMENT: 30

EXTERNAL ASSESSMENT: 70

FOR DISTANCE EDUCATION AND PRIVATE STUDENTS

MAXIMUM MARKS: 100

INSTRUCTIONS FOR THE PAPER-SETTER

For **Regular Students**, the question paper will consist of three sections A, B and C. Sections A and B will have four questions from the respective sections of the syllabus and will carry 14½ marks each. Section C will consist of 14 short-answer type questions, which will cover the entire syllabus uniformly and will carry 28 marks in all. Each short-answer type question will carry two marks each. Thirty (30) marks will comprise of internal assessment.

For Distance Education and **Private Students** The question paper will consist of three section: A, B and C. Sections A and B will have four questions from the respective sections of the syllabus and will carry 14½ marks each. Section C will consist of 14 short-answer type questions, which will cover the entire syllabus uniformly and will carry 28 marks in all. Each short-answer type question will carry 3 marks each.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is compulsory.

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SECTION A

- i) Social Change: Meaning, Concept, types and Features.
- ii) Evolution, Progress, Development and Revolution.
- iii) Factors of Social Change: Demographic and Economic.
- iv) Factors of Social Change: Technological and Cultural.

SECTION B

- i) Processes of Social Change: Sanskritization Westernization, and Secularization
- ii) Urbanization, Modernization and Globalization
- iii) Planned Social Change: Community Development, ICDS, Panchayati Raj Insitution,
- iv) MGNREGA, Swarnajayanti Gram Swarojgar Yojana.

BOOKS RECOMMENDED

1. Bottomore, T.B 1977. *Sociology: A Guide to problems and Literature*, Bombay: George Allen and Unwin.
2. Desai, A.R. 1990. *Rural Sociology in India*, Bombay: Popular Prakashan.
3. Dube, S.C. 1992. *Understanding Change*, New Delhi: Vikas Publishing House.
4. Judge, P.S. and Gurpreet Bal. 1996. *Strategies of Social Change*, New Delhi: M.D. Publication.
5. Kaur, Savinderjit. 1987. *Samaj Vigyan De Mool Sankalp*, Patiala: Punjabi University.
6. Kuppaswamy, B. 1982. *Social Change in India*, New Delhi: Vikas Publishing House.
7. MacIver and Page. 1961. *Society: An Introductory Analysis*, London: Macmillan and Co. (Punjabi translation also available. Translated by Savinderjit Kaur and Published by Punjabi University)

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8. Pathy, C.R. 1988. *Rural Development in Modern India*, New Delhi: B.R. Publishing Corp.
9. Singh, Kartar. 1999. *Rural Development: Principles, Policies and Management*, New Delhi: Sage publishers.
10. Singh, Sukhdev. 1997. *Pendu Samaj Ate Pendu Vikas*, Patiala: Punjabi University Press.
11. Srinivas, M.N. 1995 *Social Change in Modern India*, New Delhi: Orient Longman
12. Kaur, Savinderjit. *Samaj Vigyan naal jaan pehchan part-ii*, New Acedemic Compney, Maai Hira Gate. Jallandhar.

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ਸੈਸ਼ਨ 2021-2022, 2022-2023 & 2023-24

ਸਮੈਸਟਰ ਚੌਥਾ (ਪਾਸ)

ਪੇਪਰ ਭਾਰਤ ਵਿੱਚ ਸਮਾਜਿਕ ਬਦਲਾਅ

SOCIAL CHANGE IN INDIA

ਸਮਾਂ: 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 70

ਪਾਸ ਨੰਬਰ: 25

ਡਿਸਟੈਂਸ ਐਜੂਕੇਸ਼ਨ ਅਤੇ ਪ੍ਰਾਈਵੇਟ ਵਿਦਿਆਰਥੀਆਂ ਲਈ 100 ਨੰਬਰ ਦਾ ਪੇਪਰ ਅਤੇ ਕਿਸੇ ਤਰ੍ਹਾਂ ਦੀ ਵੀ ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ ਨਹੀਂ ਹੈ।

ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ

ਰੈਗੂਲਰ ਵਿਦਿਆਰਥੀਆਂ ਲਈ ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਤਿੰਨ ਭਾਗਾਂ ਓ, ਅ, ਅਤੇ ਏ ਵਿੱਚ ਵੰਡਿਆ ਹੋਇਆ ਹੈ। ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਚਾਰ ਸਵਾਲ ਦਿੱਤੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਦੋ ਸਵਾਲ ਕਰਨੇ ਹੋਣਗੇ ਜਿਹੜੇ ਕਿ $10\frac{1}{2}$ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਏ ਭਾਗ ਵਿੱਚ ਛੋਟੇ ਉੱਤਰ ਵਾਲੇ 14 ਪ੍ਰਸ਼ਨ ਹੋਣਗੇ, ਜਿਹੜੇ ਸਾਰੇ ਸਿਲੇਬਸ ਨੂੰ ਕਵਰ ਕਰਦੇ ਹੋਣਗੇ। ਹਰ ਸਵਾਲ 2 ਅੰਕਾਂ ਦਾ ਹੋਵੇਗਾ। ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ 30 ਨੰਬਰਾਂ ਦੀ ਹੋਵੇਗੀ।

ਡਿਸਟੈਂਸ ਐਜੂਕੇਸ਼ਨ ਅਤੇ ਪ੍ਰਾਈਵੇਟ ਵਿਦਿਆਰਥੀਆਂ ਲਈ ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਤਿੰਨ ਭਾਗਾਂ ਓ, ਅ, ਅਤੇ ਏ ਵਿੱਚ ਵੰਡਿਆ ਹੋਇਆ ਹੈ। ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਚਾਰ ਸਵਾਲ ਦਿੱਤੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਦੋ ਸਵਾਲ ਕਰਨੇ ਹੋਣਗੇ ਜਿਹੜੇ ਕਿ $14\frac{1}{2}$ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਏ ਭਾਗ ਵਿੱਚ ਛੋਟੇ ਉੱਤਰ ਵਾਲੇ 14 ਪ੍ਰਸ਼ਨ ਹੋਣਗੇ, ਜਿਹੜੇ ਸਾਰੇ ਸਿਲੇਬਸ ਨੂੰ ਕਵਰ ਕਰਦੇ ਹੋਣਗੇ। ਹਰ ਸਵਾਲ 3 ਅੰਕਾਂ ਦਾ ਹੋਵੇਗਾ।

ਪਰੀਖਿਆਰਥੀ ਲਈ ਹਦਾਇਤਾਂ

ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਦੋ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ ਵਿਦਿਆਰਥੀ ਵੱਲੋਂ ਦਿੱਤਾ ਜਾਵੇਗਾ। ਭਾਗ "ਏ" ਦੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਜਰੂਰੀ (compulsory) ਹਨ।

ਭਾਗ (ਓ)

- i) ਸਮਾਜਿਕ ਪਰਿਵਰਤਨ : ਅਰਥ, ਸੰਕਲਪ, ਕਿਸਮਾਂ ਅਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
- ii) ਕ੍ਰਮਵਿਕਾਸ, ਪ੍ਰਗਤੀ, ਵਿਕਾਸ ਅਤੇ ਕ੍ਰਾਂਤੀ
- iii) ਸਮਾਜਿਕ ਪਰਿਵਰਤਨ ਦੇ ਕਾਰਣ: ਜਨਸੰਖਿਅਕ, ਆਰਥਿਕ,
- iv) ਤਕਨੀਕੀ ਅਤੇ ਸਭਿਆਚਾਰਕ

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ਭਾਗ (ਅ)

- i) ਸਮਾਜਕ ਪਰਿਵਰਤਨ ਦੀਆਂ ਪ੍ਰਕ੍ਰਿਆਵਾਂ : ਸੰਸਕ੍ਰਿਤੀਕਰਣ, ਪੱਛਮੀਕਰਣ ਅਤੇ ਧਰਮਨਿਰਪੇਖੀਕਰਣ
- ii) ਸ਼ਹਿਰੀਕਰਣ ਆਧੁਨਿਕੀਕਰਣ ਅਤੇ ਵਿਸ਼ਵੀਕਰਣ,
- iii) ਯੋਜਨਾਬੱਧ ਸਮਾਜਕ ਤਬਦੀਲੀ : ਸਮੁਦਾਇਕ ਵਿਕਾਸ, ਆਈ.ਸੀ.ਡੀ.ਐਸ., ਪੰਚਾਇਤੀ ਰਾਜ ਸੰਸਥਾਵਾਂ,
- iv) ਐਮ.ਜੀ ਮਨਰੋਗਾ, ਸਵਰਣਜੈਯੰਤੀ ਗ੍ਰਾਮ ਸਵੈਰੋਜਗਾਰ ਯੋਜਨਾ

BOOKS RECOMMENDED

1. Bottomore, T.B 1977. *Sociology: A Guide to problems and Literature*, Bombay: George Allen and Unwin.
2. Desai, A.R. 1990. *Rural Sociology in India*, Bombay: Popular Prakashan.
3. Dube, S.C. 1992. *Understanding Change*, New Delhi: Vikas Publishing House.
4. Judge, P.S. and Gurpreet Bal. 1996. *Strategies of Social Change*, New Delhi: M.D. Publication.
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12. Kaur, Savinderjit. *Samaj Vigyan naal jaan pehchan part-ii, New Acedemic Compney, Maai Hira Gate. Jallandhar.*

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SESSION 2021-2022, 2022-2023 & 2023-24

**SOCIOLOGY (HONOURS) PART-IIIND
(Semester IIIrd)**

PAPER-I : SOCIETY IN INDIA

Total Teaching Periods: 75

Maximum Marks: 70

Time Allowed: 3 hours

Pass Marks: 45%

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Sections A and B will have four questions from the respective sections of the syllabus and will carry 10½ marks each. Section C will consist of 14 short-answer type questions, which will cover the entire syllabus uniformly and will carry 28 marks in all. Each short-answer type question will carry two marks each. Thirty (30) marks will comprise internal assessment.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is compulsory.

SECTION -A

- i) Traditional bases of Hindu Social Organization : Ashrama, Purushartha.
- ii) Dharma Karma Theory.
- iii) Caste and Varna, Caste and Politics.
- iv) Caste and Mobility, Reservations.

SECTION-B

- i) Changing Status of Women : Pre-Vedic to Modern Age.
- ii) Women Empowerment : Concept, Various aspects.
- iii) Population Policy and Dynamics : Size and Composition of Population, Fertility rate, Mortality rate.
- iv) Migration : Nature and Types

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BOOKS RECOMMENDED

1. Ahuja, Ram *Society in India*, Jaipur, Rawat Publications, 2005
2. Bhatnagar, G.S. and Baldev Singh Rehal 1997. *Bharati Samaj*, Patiala: Punjabi University
3. Cox, P.R. *Demography*, Cambridge: Cambridge University Press, 1976.
4. Donald J., *Principles of Demography*, New York: Wiley, 1969.
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6. Haralambos, M & M.Holborn, *Sociology: Themes and Perspectives*, Harper and Collin, 2008
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9. Thompson, W.S & D.T. Lewis, *Population Problems*, Tata McGraw-Hill : California, 1965.
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ਬੀ.ਏ. ਭਾਗ ਦੂਜਾ (ਆਨਰਜ਼)

(ਸਮੈਸਟਰ ਤੀਜਾ)

ਪੇਪਰ-1 ਭਾਰਤੀ ਸਮਾਜ

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁੱਲ ਅੰਕ : 70

ਪਾਸ ਨੰਬਰ : 45%

ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ

ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਤਿੰਨ ਭਾਗਾਂ ਉ, ਅ, ਅਤੇ ਏ ਵਿੱਚ ਵੰਡਿਆ ਹੋਇਆ ਹੈ। ਉ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਚਾਰ ਸਵਾਲ ਦਿੱਤੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਉ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਦੋ ਸਵਾਲ ਕਰਨੇ ਹੋਣਗੇ ਜਿਹੜੇ ਕਿ $10\frac{1}{2}$ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਭਾਗ ਵਿੱਚ ਛੋਟੇ ਉੱਤਰ ਵਾਲੇ 14 ਪ੍ਰਸ਼ਨ ਹੋਣਗੇ, ਜਿਹੜੇ ਸਾਰੇ ਸਿਲੇਬਸ ਤੋਂ ਕਵਰ ਕਰਦੇ ਹੋਣਗੇ। ਹਰ ਸਵਾਲ 2 ਅੰਕਾਂ ਦਾ ਹੋਵੇਗਾ। ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ 30 ਨੰਬਰਾਂ ਦੀ ਹੋਵੇਗੀ।

ਪਰੀਖਿਆਰਥੀ ਲਈ ਹਦਾਇਤਾਂ

ਉ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਦੋ ਪ੍ਰਸ਼ਨ ਉੱਤਰ ਵਿਦਿਆਰਥੀ ਵੱਲੋਂ ਦਿੱਤਾ ਜਾਵੇਗਾ। ਭਾਗ "ਏ" ਦੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਜਰੂਰੀ (compulsory) ਹਨ।

ਭਾਗ (ਉ)

- i) ਹਿੰਦੂ ਸਮਾਜਿਕ ਸੰਗਠਨ ਦੇ ਪਰੰਪਰਾਗਤ ਆਧਾਰ : ਪੁਰਸ਼ਾਰਾਮ, ਮਾਤਾਮਾ
- ii) ਧਰਮ, ਕਰਮ ਸਿਧਾਂਤ।
- iii) ਜਾਤੀ ਅਤੇ ਵਰਣ, ਜਾਤੀ ਅਤੇ ਰਾਜਨੀਤੀ,
- iv) ਜਾਤੀ ਅਤੇ ਗਤੀਸ਼ੀਲਤਾ, ਰਾਖਵਾਂਕਰਨ।

ਭਾਗ (ਅ)

- i) ਇਸਤਰੀਆਂ ਦੀ ਬਦਲਦੀ ਹੋਈ ਸਥਿਤੀ : ਪੂਰਵ ਵੈਦਿਕ ਕਾਲ ਤੋਂ ਆਧੁਨਿਕ ਯੁੱਗ।
- ii) ਇਸਤਰੀ ਸਸ਼ਕਤੀਕਰਣ : ਸੰਕਲਪ ਅਤੇ ਵਿਭਿੰਨ ਪਹਿਲੂ।
- iii) ਜਨਸੰਖਿਆ ਪਾਲਸੀ ਅਤੇ ਗਤੀਸ਼ੀਲਤਾ : ਜਨਸੰਖਿਆ ਦਾ ਵਿਵਰਣ ਅਤੇ ਸੰਗਠਨ, ਜਨਮ ਦਰ, ਮੌਤ ਦਰ,
- iv) ਪ੍ਰਵਾਸ: ਪ੍ਰਕਿਰਤੀ ਅਤੇ ਕਿਸਮਾਂ

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BOOKS RECOMMENDED

1. Ahuja, Ram *Society in India*, Jaipur, Rawat Publications, 2005
2. Bhatnagar, G.S. and Baldev Singh Behal 1997. *Bharati Samaj*, Patiala: Punjabi University
3. Cox, P.R. *Demography*, Cambridge: Cambridge University Press, 1976.
4. Donald J., *Principles of Demography*, New York: Wiley, 1969.
5. Giddens, A, *Sociology*, Cambridge: Polity Press, 2001.
6. Haralambos, M & M.Holborn, *Sociology Themes and Perspectives*, Harper and Colling, 2008
7. Kuppuswamy, B. *Social Change in India*, Vikas Publishing House New Delhi 1972.
8. Premi, M.K. *India's Population: Heading Towards a Billion*, New Delhi : BR Publishing Corporation 1991
9. Thompson, W.S & D.T. Lewis, *Population Problems*, Tata McGraw-Hill : California, 1965.
10. Kaur, Savinderjit. *Samaj Vigyan naal jaan pehelun part-ii*, New Acedemic Compney, Maai Hira Gate. Jallandhar.

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SESSION 2021-2022, 2022-2023 & 2023-24
SOCIOLOGY (HONOURS) PART IIND
(Semester IVth)
PAPER- II SOCIAL PROBLEMS IN INDIA

Total Teaching Periods: 75
Time Allowed: 3 hours

Maximum Marks: 70
Pass Marks: 45%

INSTRUCTIONS FOR THE PAPER-SETTER

The question paper will consist of three sections A, B and C. Sections A and B will have four questions from the respective sections of the syllabus and will carry 10½ marks each. Section C will consist of 14 short-answer type questions, which will cover the entire syllabus uniformly and will carry 28 marks in all. Each short-answer type question will carry two marks each. Thirty (30) marks will comprise internal assessment.

INSTRUCTIONS FOR THE CANDIDATES


Candidates are required to attempt two questions each from sections A and B. Section C is compulsory.

SECTION -A

- i) Social Problems : Meaning, Causes and Features.
- ii) Theories of Social Problems: Social Disorganization, Value Conflict, Cultural Lag.
- iii) Poverty : Concept, Causes and Measures of Poverty alleviation.
- iv) Unemployment : Types, Causes and Consequences.

SECTION-B

- i) Domestic Violence : Forms & Legislation.
- ii) Drug abuse & Alcoholism : Causes and Consequences, Measures to control it.
- iii) Youth unrest: types and causes


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iv) Farmer's Suicide : Causes and Consequences.

BOOKS RECOMMENDED

1. Madan, G.R., *Indian Social Problems*. Vol-I & II, Allied Publishers, New Delhi, 1996.
2. Haralambos, Michael, *Sociology: Themes and Perspectives*, Oxford University Press, 1984
3. Michael, M.K. & I, Robertson 1976. *Social Problems*, Toronto: Random House INC.
4. Rubington, Weingbery, 1977. *Studies of Social Problems*, New York: Oxford University Press.
5. Ahuja Ram 1997, *Social Problems in India*. Jaipur : Rawat Publications.
6. Sawinderjit Kaur. 1995(2011). *Introduction to Samaj Vigyan*, New Academic Publishing Company, Jalandhar
7. M.K.Mishra 1995. *Social Problems* , Mark Publication, Jaipur.
8. M.K.Mishra 2009. *Social Disorganization*. Vishal Publication, Gorakhpur
9. Kaur, Savinderjit. *Samaj Vigyan nirdeshan part-ii*, New Academic Compney, Maai Hira Gate. Jalandhar.

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ਸੈਸਨ 2021-2022, 2022-2023 & 2023-24

ਬੀ.ਏ. ਭਾਗ ਦੂਜਾ (ਆਨਰਜ਼)

(ਸਮੈਸਟਰ ਚੌਥਾ)

ਪੇਪਰ-II ਭਾਰਤੀ ਸਮਾਜਿਕ ਸਮੱਸਿਆਵਾਂ

Social Problems in India

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁੱਲ ਅੰਕ : 70

ਪਾਸ ਨੰਬਰ : 45%

ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ

ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਤਿੰਨ ਭਾਗਾਂ ਓ, ਅ, ਅਤੇ ਬ ਵਿੱਚ ਵੰਡਿਆ ਹੋਇਆ ਹੈ। ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਚਾਰ ਸਵਾਲ ਦਿੱਤੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਦੋ ਸਵਾਲ ਕਰਨੇ ਹੋਣਗੇ ਜਿਹੜੇ ਕਿ $10\frac{1}{2}$ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਬ ਭਾਗ ਵਿੱਚ ਛੋਟੇ ਉੱਤਰ ਵਾਲੇ 14 ਪ੍ਰਸ਼ਨ ਹੋਣਗੇ, ਜਿਹੜੇ ਸਾਰੇ ਸਿਲੇਬਸ ਨੂੰ ਕਵਰ ਕਰਦੇ ਹੋਣਗੇ। ਹਰ ਸਵਾਲ 2 ਅੰਕਾਂ ਦਾ ਹੋਵੇਗਾ। ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ 30 ਨੰਬਰਾਂ ਦੀ ਹੋਵੇਗੀ।

ਪਰੀਖਿਆਰਥੀ ਲਈ ਹਦਾਇਤਾਂ

ਓ ਅਤੇ ਅ ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਦੋ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ ਵਿਦਿਆਰਥੀ ਵੱਲੋਂ ਦਿੱਤਾ ਜਾਵੇਗਾ। ਭਾਗ "ਬ" ਦੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਜਰੂਰੀ (compulsory) ਹਨ।

ਭਾਗ (ਓ)

- i) ਸਮਾਜਿਕ ਸਮੱਸਿਆਵਾਂ : ਅਰਥ, ਕਾਰਣ ਅਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ।
- ii) ਸਮਾਜਿਕ ਸਮੱਸਿਆਵਾਂ ਦੇ ਸਿਧਾਂਤ: ਸਮਾਜਿਕ ਵਿਘਟਨ, ਕਦਰਾਂ ਕੀਮਤਾਂ ਦਾ ਸੰਘਰਸ਼, ਸਮਾਜਿਕ ਪਛੜੇਵਾਂ।
- iii) ਗਰੀਬੀ : ਸੰਕਲਪ, ਕਾਰਣ ਅਤੇ ਗਰੀਬੀ ਦੂਰ ਕਰਨ ਦੇ ਉਪਾਅ।
- iv) ਬੇਰੁਜ਼ਗਾਰੀ : ਕਿਸਮਾਂ, ਕਾਰਣ ਅਤੇ ਪਰਿਣਾਮ।

ਭਾਗ (ਅ)

- i) ਘਰੇਲੂ ਹਿੰਸਾ : ਕਿਸਮਾਂ ਅਤੇ ਵਿਧਾਨਿਕ ਉਪਚਾਰ
- ii) ਨਸ਼ਿਆਂ ਦਾ ਸੇਵਨ ਅਤੇ ਸੁਰਾਬਨੋਸ਼ੀ : ਕਾਰਣ, ਪਰਿਣਾਮ ਅਤੇ ਰੋਕਣ ਦੇ ਉਪਾਅ।
- iii) ਯੂਵਕ ਅਸ਼ਾਂਤੀ: ਕਿਸਮਾਂ ਅਤੇ ਕਾਰਨ
- iv) ਕਿਸਾਨਾਂ ਦੁਆਰਾ ਆਤਮ ਹੱਤਿਆ: ਕਾਰਣ ਅਤੇ ਪਰਿਣਾਮ।

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BOOKS RECOMMENDED

1. Madan, G.R., *Indian Social Problems*, Vol-I & II, Allied Publishers, New Delhi, 1996.
2. Haralambos, Michael, *Sociology. Themes and Perspectives*, Oxford University Press, 1984
3. Michael, M.K. & I, Robertson 1976. *Social Problems*, Toronto: Random House INC.
4. Rubington, Weingbery, 1977. *Studies of Social Problems*, New York: Oxford University Press.
5. Ahuja Ram 1997. *Social Problems in India*, Jaipur : Rawat Publications.
6. Sawinderjit Kaur : 1995(2011). *Introduction to Samaj Vigyan*, New Academic Publishing Company, Jalandhar
7. M.K.Mishra 1995. *Social Problems*, Mark Publication, Jaipur.
8. M.K.Mishra 2009. *Social Disorganization*, Vishali Publication, Gorakhpur
9. Kaur, Savinderjit. *Samaj Vigyan naal jaan pehchan part-ii*, New Academic Compney, Maai Hira Gate. Jalandhar.

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ਜੇ.ਐਮ. ਡੀ.ਐਮ. ਪੀ.ਐਮ. 20/8/2022

(11) 28/12

**ORDINANCES
AND OUTLINES OF TESTS,
SYLLABI AND COURSES OF READING**

FOR

**BACHELOR OF COMPUTER APPLICATIONS (B.C.A)
(SEMESTER SYSTEM)**

PART-III

(Semester 5th and 6th)

For 2022-23 Session

(ਸੈਸ਼ਨ 2020-21 ਵਿਚ ਦਾਖਲ ਹੋਏ ਵਿਦਿਆਰਥੀਆਂ ਲਈ)



**PUNJABI UNIVERSITY
PATIALA**

Ravod

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OUTLINE OF PAPERS AND TESTS
for
B.C.A. Third Year (5th Semester)

For 2022-23 Session
(ਸੈਸ਼ਨ 2020-21 ਵਿਚ ਦਾਖਲ ਹੋਏ ਵਿਦਿਆਰਥੀਆਂ ਲਈ)

Code	Title of Paper	Hours per Week	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BCA-311	English Literary Skills – I	4	75	25*	100	3
BCA-312	System Analysis and Design	4	75	25	100	3
BCA-313	System Software	4	75	25	100	3
BCA-314	Java Programming	4	75	25	100	3
BCA-315	Web Designing using HTML and DHTML	4	75	25	100	3
BCA-316	Software Lab – IX (based on paper BCA-314: Java Programming)	4	35	15	50	3
BCA-317	Software Lab – X (based on paper BCA-315: Web Designing using HTML and DHTML)	4	35	15	50	3
		Total	445	155	600	3

Note:

The break-up of marks for the practical will be as under:

- | | | |
|------|--|----------|
| i. | Lab Record (Internal Assessment) | 15 Marks |
| ii. | Viva Voce (External Evaluation) | 15 Marks |
| iii. | Program Development and Execution(External Evaluation) | 20 Marks |

The break-up of marks for the internal assessment for theory papers except BCA-211 will be as under:

- | | | |
|------|---|----------|
| i. | One or two tests out of which minimum one best will be considered for assessment. | 15 Marks |
| ii. | Attendance | 5 Marks |
| iii. | Class participation/behaviour/assignment | 5 Marks |

*The break-up of marks for the internal assessment for BCA-211: English Communication Skills – I will be as under:

- | | | |
|------|--|----------|
| i. | Formal assessment through Interview/Self Introduction/Recitation etc. | 10 Marks |
| ii. | Conversation Skills (particularly listening and speaking to be evaluated through oral examination) | 5 Marks |
| iii. | Attendance | 5 Marks |
| iv. | Class participation/behavior/assignment | 5 Marks |

26/1

OUTLINE OF PAPERS AND TESTS
B.C.A. Third Year (6th Semester)
For 2022-23 Session

(ਸੈਸਨ 2020-21 ਵਿਚ ਦਾਖਲ ਹੋਏ ਵਿਦਿਆਰਥੀਆਂ ਲਈ)

Code	Title of Paper	Hours per Week	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BCA-321	English Literary Skills – II	4	75	25*	100	3
BCA-322	E-Commerce	4	75	25	100	3
BCA-323	Operating Systems	4	75	25	100	3
BCA-324	Software Engineering	4	75	25	100	3
BCA-325	Web Designing using ASP.NET	4	75	25	100	3
BCA-326	Software Lab – XI (Minor Project)	4	35	15	50	3
BCA-327	Software Lab – XII (based on BCA-325: Web Designing using ASP.NET)	4	35	15	50	3
		Total	445	155	600	3

Note:

The break-up of marks for the practical will be as under:

- | | | |
|------|---|----------|
| i. | Lab Record (Internal Assessment) | 15 Marks |
| ii. | Viva Voce (External Evaluation) | 15 Marks |
| iii. | Program Development and Execution (External Evaluation) | 20 Marks |

The break-up of marks for the internal assessment for theory papers except BCA-211 will be as under:

- | | | |
|------|---|----------|
| i. | One or two tests out of which minimum one best will be considered for assessment. | 15 Marks |
| ii. | Attendance | 5 Marks |
| iii. | Class participation/behaviour/assignment | 5 Marks |

*The break-up of marks for the internal assessment for BCA-211: English Communication Skills – I will be as under:

- | | | |
|------|--|----------|
| i. | Formal assessment through Interview/Self Introduction/Recitation etc. | 10 Marks |
| ii. | Conversation Skills (particularly listening and speaking to be evaluated through oral examination) | 5 Marks |
| iii. | Attendance | 5 Marks |
| iv. | Class participation/behavior/assignment | 5 Marks |




BCA-311 : English Literary Skills-1

**COMMON SYLLABUS OF ENGLISH WILL BE AS PER UG
(BOARD OF STUDIES) IN FACULTY OF LANGUAGE
PUNJABI UNIVERSITY, PATIALA**

Rawal ~~MT~~ Nijla
J.P.

(A) INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of *three sections A, B and C*. Section A and B will have four questions from the respective section of the syllabus carrying 15 marks for each question. Section C will consist of 5-10 short answer type questions carrying a total of 15 marks, which will cover the entire syllabus uniformly. . Candidates are required to *attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.*

(B) INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.

SECTION-A

Systems concepts: Definition and characteristics of a system, Elements of a system, Types of systems. **The system development life cycle:** Introduction to various phases.

The role of the Systems Analyst: Qualifications of a systems analyst, various roles of the systems analyst.

Systems analysis: Initial investigation, needs identification, determining the user's information requirements, Information-gathering tools.

SECTION B

Structured analysis tools: Data flow diagram, Data dictionary, Decision tree, Structured English, Decision tables. **Feasibility study:** Feasibility considerations, Steps in Feasibility analysis. **Systems Design:** The process and stages of systems design, Input/output and forms design, Database design.

Implementation and software maintenance: Conversion, Post-implementation review. Software maintenance: maintenance or enhancement, Primary activities of a maintenance procedure.

Hardware and software selection: Procedure and major phases in selection.

Text Book:

1. E. M. Awad: Systems Analysis and Design, Galgotia Publications (P) Ltd.

Reference Books:

1. Systems Analysis and Design: Techniques, Methodologies, Approaches, And Architectures 1st Edition **Author:** Hardgrave Bill C. , Siau Keng , Chiang Roger H. L. **Publisher:** M.E. Sharpe



(A) INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of *three sections A, B and C*. Section A and B will have four questions from the respective section of the syllabus carrying 15 marks for each question. Section C will consist of 5-10 short answer type questions carrying a total of 15 marks, which will cover the entire syllabus uniformly. . Candidates are required to *attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.*

(B) INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.

SECTION – A

Introduction: Definition of system software, types of system software, features of system programming, system programming vs. application programming.

Language Processors: Introduction, Language processing activates, Fundamentals of Language Processing.

Assembler: Elements of Assembly Language Processing, A simple Assembly scheme, Pass structure of Assemblers, Design of a two pass assembler. A brief overview of single pass assembly and problem of forward references.

Linkers and Loaders: Definition of linker and loader Design of Absolute Loader, Relocatable Loader.

SECTION –B

Compilers: Overview of Compilation Process, Scanning, Parsing (Top down and Bottom Up parsing), Intermediate code forms (variant I and II) intermediate code form for arithmetic expressions (postfix, prefix, triples, quadruples – concepts only), Code optimisation transformations (Compile time evaluation, Elimination of common sub-expression, Dead code elimination, Frequency reduction, strength reduction – concepts only), compiler vs. interpreter.

Software Tools: Software tools for program development, Editors, Debug monitors, Programming environments, User Interfaces.

Text Book:

1. Dhamdhare D. M. "Systems Programming and Operating system", Tata McGraw-Hill Publishing Company Limited, New Delhi, Second Edition.

References:

1. Donovan, "System programming". (McGraw-Hill), 1991
2. Aho andUlman, "Principles of Compilers", Narosa Publishing House, 1986.
3. Aho, A.V., Ullman Sethi R., I.D.: Compilers : Principles, Techniques and Tools, Addison-Wesley Publishing Co., 1988.

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(A) INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of *three sections A, B and C*. Section A and B will have four questions from the respective section of the syllabus carrying 15 marks for each question. Section C will consist of 5-10 short answer type questions carrying a total of 15 marks, which will cover the entire syllabus uniformly. . Candidates are required to *attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.*

(B) INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.

SECTION-A

Introduction to java: evolution, features, comparison with C and C++; Java program structure; tokens, keywords, constants, variables, data types, type casting, statements.

Operators and expressions: arithmetic, relational, logical, assignment, increment, decrement, conditional, bitwise and special operators. Operator precedence & associativity rules.

Control statements: if else, switch case, for, while, do while, break, continue, labeled loops.

Class: syntax, instance variable, class variables, methods, constructors, overloading of constructors and methods.

SECTION B

Inheritance: types of inheritance, use of super, method overriding, final class, abstract class, wrapper classes.

Arrays, Strings and Vectors, Packages and Interfaces, visibility controls

Errors and Exceptions: Types of errors, Exception classes, Exception handling in java, use of try, catch, finally, throw and throws. Taking user input, Command line arguments.

Multithreaded Programming: Creating Threads, Life cycle of thread, Thread priority, Thread synchronization, Inter-thread communication.

Text Book:

1. Patrick Naughton and Herbert Schildt, "*The Complete Reference Java 2*", TMH

References:

2. Horstmann, Cay S. and Gary Cornell, "*Core Java 2: Fundamentals Vol. 1*", Pearson Education.
3. E. Balagurusamy "*Programming with Java*", TMH

Handwritten signatures and initials in blue ink.

(A) INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of *three sections A, B and C*. Section A and B will have four questions from the respective section of the syllabus carrying 15 marks for each question. Section C will consist of 5-10 short answer type questions carrying a total of 15 marks, which will cover the entire syllabus uniformly. . Candidates are required to *attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.*

(B) INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.

SECTION-A

Introduction to HTML: Basic HTML concepts, an overview of HTML markup.

What is good Web design; the process of Web publishing; implementation; the phases of Web site development; HTML's role in the Web; and issues facing HTML and the Web.

HTML overview: the structure of HTML documents; document types; the <HTML> element; the <HEAD> element; the <BODY> element;

Links and Addressing: Linking basics; what are URLs; linking in HTML; anchor attributes; images and anchors; image maps; semantic linking with the <LINK> element; meta-information;

HTML and Images: The role of images on the Web; image preliminaries; image downloading issues; obtaining images; HTML image basics; images as buttons; and image maps.

Introduction to Layout: Backgrounds, Colors, and Text; design requirements; HTML approach to Web design; fonts; colors in HTML; document-wide color attributes for <BODY>; and background images. Introduction to tables, LISTS; frames

SECTION-B

Style Sheets: style sheets basics; style sheet example; style sheet properties; positioning with style sheets;

Basic Interactivity and HTML: Forms form preliminaries; the <FORM> element; form controls;

Introduction to Server-Side Programming: This chapter covers: overview of client/server programming on the Web; server-side programming; common gateway interface (CGI);

Dynamic HTML (DHTML): dynamic HTML and document object model; HTML and scripting access; rollover buttons; moving objects with DHTML; and ramifications of DHTML.

Text Book:

1. Thomas A. Powell, "HTML: The Complete Reference", Osborne/McGraw-Hill

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References:

1. Deitel, Deitel and Nieto : Internet & WWW. How to program, 2nd Edition, Pearson Education Asia.
2. E Stephen Mack, JananPlatt : HTML 4.0 , No Experience Required, 1998, BPB Publications.
3. "HTML Complete" by Sybex, BPB Publications, 2001.
4. Bayross, "Web Enabled Commercial Applications Development Using HTML, DHTML, Java Script, Perl CGI," Third Edition, BPB Publications.
5. Scott Mitchell, "Designing Active Server Pages, "O Relly, 2000.
6. Keith Morneau, Jill Batistick, "Active Server Pages", First Edition, Vikas Thomson Learning, 2000.
7. Smith, A. Eric, "Active Server Pages 3 Programming Bible", Wiley India, 2000.

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BCA-316: Software Lab – IX
(Based on paper BCA-314: Java Programming)

Max Marks: 50

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Practical Sessions to be conducted: 40-50 Hrs

This laboratory course will comprise as exercises to supplement what is learnt under paper BCA-314: Java Programming. Students are required to develop the following type of programs in Java language with internal documentation:

1. Write a *Class Date* that takes day, month, and year while creating an object of this class. Find a new date when the number of days is given.
2. Write a program to implement Boolean AND, OR, XOR, and NOT operations.
3. Write a program to Add, Subtract, Multiply two matrices using switch statement. The program must also validate the sizes of two matrices before performing any operation and should raise exception in case the operation cannot be performed.
4. Write a program to store and then prints sorted names of students according to their length of name using arrays with variable sized rows.
5. Write a program to find the *area of all types of triangles* using the principle of *constructor overloading and Inheritance* depending on the number of dimensions given in the input parameter list using *super* to call the super class constructor.
6. Write a program to find the *area of rectangle* using an *abstract super* class figure and also *override* method use to compute the area of the rectangle.
7. Write a program to implement grow able and shrinkable *Stack* that can support operations like- push, pop, and view the top item with concept of dynamic allocation using *finalize()* method. The program should also incorporate the concepts of *private and public* access methods to avoid accidental manipulations of stack.
8. Write a program to demonstrate *static variables, methods and blocks*.
9. Write a program to swap two items belonging to an object using *returning of object* by a function.
10. Write a program to count the frequency of each vowel in a given string.
11. Demonstrate the use of *static and non static nested* classes.
12. Create a package containing a class to print your (name, roll no, marks) and use this package in another program using *import* statement.

The break-up of marks for the practical will be as under

i. Lab Record (Internal Assessment)	15 Marks
ii. Viva Voce (External Evaluation)	15 Marks
iii. Program Development and Execution(External Evaluation)	20 Marks

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Max Marks: 50

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Practical Sessions to be conducted: 40-50 Hrs

This laboratory course will comprise as exercises to supplement what is learnt under paper BCA-315: Web Designing using HTML and DHTML. Students are required to do at least 10 assignments based on the paper.

1. Create a web page to show the structure of HTML.
2. Show the use of formatting tags in HTML.
3. Write HTML code to show the use of absolute and relative URL with anchor tag.
4. Show the use of image tag and show images as buttons.
5. Create a web page to show the use of image maps.
6. Create a table in which colspan and rowspan elements are used.
7. Create a webpage to show the use of different lists available in HTML.
8. Create a webpage to show the use of frame tag in HTML.
9. Create admission form for a college.
10. Create a webpage to show the use of different types of CSS.
11. Create a webpage to show the DHTML properties.

The break-up of marks for the practical will be as under

i. Lab Record (Internal Assessment)	15 Marks
ii. Viva Voce (External Evaluation)	15 Marks
iii. Program Development and Execution(External Evaluation)	20 Marks



BCA-321 : English Literary Skills-II

**COMMON SYLLABUS OF ENGLISH WILL BE AS PER UG
(BOARD OF STUDIES) IN FACULTY OF LANGUAGE
PUNJABI UNIVERSITY, PATIALA**

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(A) INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of *three sections A, B and C*. Section A and B will have four questions from the respective section of the syllabus carrying 15 marks for each question. Section C will consist of 5-10 short answer type questions carrying a total of 15 marks, which will cover the entire syllabus uniformly. Candidates are required to *attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.*

(B) INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.

SECTION – A

Introduction to E-commerce: Definition of E-commerce, Advantages and disadvantages of E-commerce, E-commerce versus traditional commerce.

Internet and WWW, Electronic commerce framework, Electronic commerce and media convergence, The anatomy of E-commerce applications.

Architectural framework for E-commerce, World Wide Web as the architecture, Web background: Hypertext publishing, Security and the Web.

Consumer-oriented E-commerce: Consumer-oriented applications, Mercantile Process Models – consumer's perspective, Merchant's perspective.

SECTION-B

Advertising and Marketing on the Internet: The new age information based marketing, Advertising on the Internet – Active or push-based advertising models, Passive or pull-based advertising models. Guidelines for Internet advertising. Online marketing process.

Types of Electronic Payment Systems, Digital token-based electronic payment systems, Smart cards and electronic payment systems, Credit card-based electronic payment systems, Risk and electronic payment systems.

Electronic Data Interchange and its applications in business.

Legal, Ethical and other public policy issues related to e-commerce.

Text Book:

1. Ravi Kalakota, Andrew B. Whinston: Frontiers of Electronic Commerce, Addison Wesley.

References:

1. EfraimTurbon, Jae Le, David King, Chung: Electronic Commerce- A managerial perspective, Prentice-Hall International.
2. Gary P. Schneider, James T. Perry: Electronic Commerce

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(A) INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of *three sections A, B and C*. Section A and B will have four questions from the respective section of the syllabus carrying 15 marks for each question. Section C will consist of 5-10 short answer type questions carrying a total of 15 marks, which will cover the entire syllabus uniformly. . Candidates are required to *attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.*

(B) INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.

SECTION-A

Operating System – Definition, Need, Services, Types of operating systems: simple batch system, multi programmed batch system, time sharing system, parallel system, distributed system, real time system, personal computer system. Operating system components, operating system services, system calls.

Process Management – process definition, process state, process scheduling, operations on processes, Basic concepts of thread, Difference between process and thread.

CPU Scheduling – Basic concepts, scheduling criteria, scheduling algorithms – FCFS, SJF, Round Robin and Multilevel queue scheduling.

SECTION-B

Deadlocks – Characteristics of deadlocks, methods for handling deadlocks, deadlock prevention, deadlock avoidance

Memory Management – Logical versus Physical address space, swapping, contiguous allocation, Paging, Concept of Virtual memory, Implementation by Demand Paging, Page replacement algorithms – FIFO, Optimal, LRU, Concept of thrashing .

File Management – Allocation methods: contiguous allocation, linked allocation and indexed allocation;

Device Management – Disk Scheduling: FCFS, SSTF, SCAN, C-SCAN, LOOK.

Text Book:

1. Abraham Silberschatz, Peter B. Galvin, Operating Sytem Concepts, Addison –Wesley Publishing Co. Engineering, Third Edition 2005 ,PankajJalote, Narosa Publications. 5th Edition

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(A) INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of *three sections A, B and C*. Section A and B will have four questions from the respective section of the syllabus carrying 15 marks for each question. Section C will consist of 5-10 short answer type questions carrying a total of 15 marks, which will cover the entire syllabus uniformly. . Candidates are required to *attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.*

SECTION – A

Introduction – The Problem Domain, Software Engg.Challenges, Software Engg.Approach. Software development life cycle, its phases, **Software development process models** :Waterfall, Prototyping, Iterative;

Software Process- Characteristics of software process, Project management process, Software configuration management process.

Project Planning – activities, COCOMO model.**Software Metrics** – Definition, Importance, Categories of metrics. **Software Quality** – Attributes,Cyclomatic complexity metric.

Software Requirements Analysis – Need for SRS, Data flow diagrams, Data Dictionary, entity relationship diagram, Characteristics and components of SRS, validation, metrics

SECTION-B

Software Design – Design principles, Module-level concepts, Structure Chart and Structured Design methodology,, verification, metrics : network metrics, information flow metrics.

Coding – Programming Principles and Guidelines, Verification- code inspections, static analysis.**Software Testing** – testing fundamentals, Black Box Testing : Equivalence class partitioning, Boundary value analysis, cause-effect graphing; White Box Testing : Control flow and Data flow based testing, mutation testing; levels of testing, test plan, test case specification, test case execution and analysis,

Software maintenance – Categories of maintenance.**Software Reliability** – Definition, uses of reliability studies

Text Book:

1. An Integrated approach to Software Engineering, Third Edition 2005, Pankaj Jalote, Narosa Publications.

References:

1. Software Engineering , Revised Second Edition , K.K. Aggarwal, Yogesh Singh, New Age International Publishers.
2. Software Engineering – A Practitioner's Approach, Fifth Edition, Roger. S. Pressman, McGraw Hill

BCA-325: Web designing using ASP.NET

Max Marks: 75

Min Pass Marks: 35%

Maximum Time: 3 Hrs

Lectures to be delivered: 45-55 Hrs

(A) INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of *three sections A, B and C*. Section A and B will have four questions from the respective section of the syllabus carrying 15 marks for each question. Section C will consist of 5-10 short answer type questions carrying a total of 15 marks, which will cover the entire syllabus uniformly. . Candidates are required to *attempt five questions in all by selecting at least two questions each from the section A and B. Section C is compulsory.*

SECTION-A

Introduction to .net framework: - Genesis of .NET, Features, Advantages and disadvantages of .net framework. Common Language Runtime:-Common Type System, Common Language Specification, .Net binaries, Microsoft Intermediate Language, Meta Data, .Net types and .net namespaces.

Basics of ASP. NET: - Introducing ASP .NET- Creating ASP .NET applications using command line compiler and visual studio .net IDE.

Introduction to c#:- variables, Constants, Data Types, Operators, Control Structures and loops, Arrays, events.

Introduction to Classes and objects

Web forms, Standard Controls: - Display information, Accepting user input, Submitting form data, displaying images, using the panel control, using the hyperlink control.

Validation Controls: required field validation control, range validator Control, compare validator control, regular expression validator control, custom validator control, validation summary controls.

SECTION-B

Rich Web Controls: -Accepting file uploads, displaying a calendar, Displaying advertisement, displaying different page views, displaying a wizard. List Controls: Dropdown list control, Radio button, list controls. Grid View Controls: Grid view control fundamentals, using field with the grid view control, working with grid view control events extending the grid view control. Debugging, caching and deploying ASP .NET pages.

Master pages: - Designing Website with Master Pages: Creating master pages, Modifying master page content, Loading master page dynamically. ASP.NET security, localizing ASP .NET applications.

ADO.NET:- Changes from ADO to ADO.NET, ADO .NET Managed Providers – OleDb and SQL Managed Providers – OleDb Data Adapter Type. SQL Data Source Control: Creating database connections, executing database commands, Using



ASP.NET parameters with the SQL data source controls, programmatically executing SQL data source commands, Caching database data with the SQL data Source controls.

References:

1. ASP.NET 3.5: Stephen Walther, Pearson Education, 2005
2. Andrew Troelsen – “C# and the .Net Platform” – Apress – 2001.(Unit I and II)
3. David S. Platt – “Introducing .Net” – Microsoft Press – 2002
4. ASP.NET Bible” – MridulaParihar – Wiley-Dreamtech India Pvt. Ltd
5. Visual Basic .net Comprehensive Concepts and Techniques’ Shelly, cashman, QuasneyCengage learning, 2012
6. Murach's Beginning Visual Basic .NET Anne Prince Murach

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BCA-326: Software Lab – XI (Minor Project)

Max Marks: 50

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Practical Sessions to be conducted: 40-50 Hrs

This laboratory course will comprise as advance exercises to what is learnt in the previous semesters. Students are required to perform following activities

Activity 1: Select any one basic project idea for implementation that involves GUI forms, data to be stored at back end, Retrieval of data from database, generating reports i.e. involving the requirement of database connectivity. (1-2 page overview about this in your assignment)

Activity 2: Plan and Design GUI forms for interaction with user and templates for displaying the reports generated from data stored requested by end users. (Snapshots of all Forms to be attached along with their code)

Activity 3: Write code for event handling, database connectivity and report generation. (Full working to be explained as algorithm and then implementation in suitable programming language based on events)

The breakup of marks for the practical will be as under

i.	Lab Record (Internal Assessment)	15 Marks
ii.	Viva Voce (External Evaluation)	15 Marks
iii.	Program Development and Execution(External Evaluation)	20 Marks

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BCA-327: Software Lab – XII
(Based on paper BCA-325: Web designing using ASP.NET)

Max Marks: 50
Min Pass Marks: 35%

Maximum Time: 3 Hrs.
Practical Sessions to be conducted: 40-50 Hrs

This laboratory course will comprise as exercises to supplement what is learnt under paper BCA-325: Web designing using ASP.NET. Students are required to do at least 10 assignments based on the paper.

PRACTICAL ASSIGNMENTS:-

1. Write a program to show the use of standard controls in a web form.
2. Write a program containing the list controls and its functions;
3. Write a program to show the use of file upload and calendar control.
4. Write a program to display advertisement on a web page.
5. Write a program to create an admission form for a college.
6. Write a program to demonstrate the master page.
7. Write a program to create login page which accepts user name and password, Then check for authentication of the user.
8. Write a program that demonstrates a textbox for a user input name and validate it with RequiredField Validation.
9. Write a program that demonstrates different validation controls.
10. Create a user control that displays the current date and time. Include it in a Web Form and refresh it each time a button is clicked.
11. Write a program to demonstrate ADO.NET controls and connectivity with database.
12. Write a program to demonstrate submits data in database by using the ado.net controls.

The breakup of marks for the practical will be as under

i.	Lab Record (Internal Assessment)	15 Marks
ii.	Viva Voce (External Evaluation)	15 Marks
iii.	Program Development and Execution(External Evaluation)	20 Marks

**OUTLINES OF TESTS,
SYLLABI AND COURSES OF READING**

FOR

**B.Voc. (SOFTWARE DEVELOPMENT)
Programme Code : BSDB3PUP**

**First Year
(FIRST AND SECOND SEMESTER)
FOR
For 2023-24, 2024-25 & 2025-26 Sessions**



PUNJABI UNIVERSITY PATIALA
(Established under Punjab Act no. 35 of 1961)



B. VOC. (Software Development) First Year (1st Semester)
Programme Code: BSDB3PUP
For 2022-23 Sessions

Code	Title of Paper	Credits	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BSDB1101T	PUNJABI COMPULSORY-I OR PUNJABI COMPULSORY-I (MUDLA GYAN - I)**	4	70	30	100	3
BSDB1102T	Fundamentals of Computer and Software Development	4	70	30	100	3
BSDB1103T	Computer Programming using C	4	70	30	100	3
BSDB1104T	Web Designing using HTML and DHTML	4	70	30	100	3
BSDB1105P	Project – I	2	70	30	100	3
BSDB1106L	Software Lab – I (Based on BSDB1103T & BSDB1104T)	2	70	30	100	3
Total		20	420	310	600	

1. The breakup of marks for the practical will be as under:
 - i. Internal Assessment 30 Marks
 - ii. Viva Voce (External Evaluation) 20 Marks
 - iii. Lab Record Program Development and Execution(External Evaluation) 50 Marks
2. The breakup of marks for the internal assessment for theory Subjects will be as under:
 - i. Average of Both Mid Semester Tests / Internal Examinations 20 Marks
 - ii. Attendance 5 Marks
 - iii. Written Assignment/Project Work etc. 5 Marks

** Only those students who have not studied Punjabi up to matriculation can opt for Elementary Punjabi. The code for the paper is same.



OUTLINE OF PAPERS AND TESTS
FOR
B. VOC. (Software Development) First Year (2nd Semester)
Programme Code: BSDB3PUP
For 2022-23 Sessions

Code	Title of Paper	Credits	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BSDB1201T	Functional Punjabi / Elementary Punjabi*	4	70	30	100	3
BSDB1202T	Fundamentals of DBMS	4	70	30	100	3
BSDB1203T	Fundamentals of Windows and Server Administration	4	70	30	100	3
BSDB1204T	Data Structure	4	70	30	100	3
BSDB1205L	Software Lab-II	2	70	30	100	3
BSDB1206L	Software Lab – III	2	70	30	100	3
BSDB1208T	Drug Abuse : Problem, Management and Prevention**		70	30	100	3
		20	420	180	600	

1. The breakup of marks for the practical will be as under:

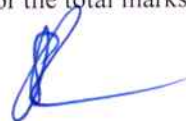
- | | |
|--|----------|
| i. Internal Assessment | 30 Marks |
| ii. Viva Voce (External Evaluation) | 20 Marks |
| iii. Lab Record Program Development and Execution(External Evaluation) | 50 Marks |

2. The breakup of marks for the internal assessment for theory Subjects will be as under:

- | | |
|---|----------|
| i. Average of Both Mid Semester Tests / Internal Examinations | 20 Marks |
| ii. Attendance | 5 Marks |
| iii. Written Assignment/Project Work etc. | 5 Marks |

* Only those students who have not studied Punjabi up to matriculation can opt for Elementary Punjabi. The code for the paper is same.

** BSDB1208T: Drug Abuse: Problem, Management and Prevention is a compulsory qualifying paper as per university guidelines, the marks for this paper are not counted for the total marks for the degree.





BSDB1101T : PUNJABI COMPULSORY - I
AS APPROVED BY DEPARTMENT OF PUNJABI

OR

To Download the Syllabus, go to:

www.punjabiuniversity.ac.in → Important Links → Download Syllabus → Academic
Session 2023-24 → Faculty of Languages → Punjabi → Under Graduate Courses



BSDB1101T : PUNJABI COMPULSORY (Mudla Gyan) - I
AS APPROVED BY DEPARTMENT OF PUNJABI

OR

To Download the Syllabus, go to:

www.punjabiuniversity.ac.in → Important Links → Download Syllabus →
Academic Session 2023-24 → Faculty of Languages → Punjabi → Under
Graduate Courses



BSDB1102T : FUNDAMENTALS OF COMPUTER AND SOFTWARE DEVELOPMENT

Max Marks: 70

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65 Hrs.

Course Objectives

- Aware students about basic of computer and its evolution.
- Provide knowledge of different units of computer like processing unit, IO unit, and storage unit.
- Applications of IT.
- Advanced trends in IT.

Learning Outcome

On the successful completion of the course, students will be able to;

- Have a clear understanding of fundamentals of computers so as to apply it in real life problems.
- Develop an in depth knowledge of various motivational theories.
- Develop skills to get employment in I.T. field

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to Computer: Block diagram of a Computer, Characteristics of computers and Generations of computers.

Software and Hardware: Types of Software and Hardware.

Input/output Devices, Memories: Main Memories - RAM, ROM and Secondary Storage Devices - Hard Disk, Compact Disk, DVD, and Portable devices.

Computer Languages: Machine language, assembly language, high level language, 4GL,

Operating System : Introduction to windows, Linux, MAC., Software Installation, Driver Installation, Working with Control Panel, Window 7 installation.

Applications of Information Technology and Trends: IT in Business and Industry, IT in Education & training, IT in Science and Technology, IT and Entertainment, Current Trends in IT Application - AI, Virtual Reports, voice recognition, Robots, Multimedia Technology.

SECTION B

Number System: Non-positional and positional number systems, Base conversion, Concept of Bit and Byte, binary, decimal, hexadecimal, and octal systems, conversion from one system to the other.

Computer Network: Network types, network topologies.

Understanding Basics of Software Development: Basic Requirements for Software Development. Describing Software Quality Attributes and the problems associated with software and software

Development. Professional issues related to Software Development. Understanding Core Programming, Understanding Object oriented Programming. Opportunities and Challenges facing softwareengineering

Reference Books:

- 1 P.K. Sinha and P. Sinha, Foundations of Computing, BPB.
- 2 Chetan Srivastva, Fundamentals of Information Technology, Kalyani Publishers.
- 3 Roger S.Pressman, Tata Mcgraw Hill.
- 4 Ian Somerville, Software Engineering, Pearson education.
- 5 Rajib Mall, Fundamental of Software Engineering, PHI.

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BSDB1103T : COMPUTER PROGRAMMING USING "C"

Max Marks: 70

Max.Time: 3 Hrs.

Min Pass Marks: 35%

Lectures to be delivered: 55-65 Hrs

Course Objective

- To give fundamental knowledge of Programming Languages
- To explain the basic concepts related to ,Algorithms, Flowchart, Compiler, Linking and Loading
- To make the learners acquainted with the use different operators.

Learning Outcome

On the successful completion of the course, students will be able to;

- Have a clear understanding of programming theories so as to apply it in real life problems.
- Develop an in depth knowledge of various techniques of programs.
- Develop skills to get employment in the field of computer field.

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Fundamental of C programming: Overview, Basic Structure of C Program, ProgramDebugging, Compilation and Execution, Rules of Character set, Identifiers and keywords, Constants, Variables, Data types.

Header Files: stdio.h, math.h, string.h, process.h etc.

I/O functions: Formatted and Unformatted console I/O functions.

Operators: Need, Types, Precedence and Associativity. Type conversion (Implicit and Explicitconversion).

Control Structure: Decision making statements (if, if else, switch), Loop control statements(for, while and do-while), jumping statements (break, continue, goto), nested control structures.

Arrays: One dimensional and multi dimensional arrays, Array declaration, initialization,reading values into an array, displaying array contents.

Strings: input/output of strings, string handling functions (strlen, strcpy, strcmp, strcat &strev).

SECTION B

Functions: Uses of functions, various categories of functions, Library functions and userdefined functions, prototype, definition and call, formal and actual arguments, local and global variables, methods of parameter passing to functions, recursion.

Storage Classes: automatic, external, static and register variables.

Structures and unions: using structures and unions, comparison of structure with arrays andunion.

Pointers: pointer data type, pointer declaration, initialization, accessing values using pointers, pointers and arrays.

Reference Books:

1. E. Balagurusamy, Programming in C, Tata McGraw-Hill.
2. Let Us C, Yashvant P Kanetkar, BPB.
3. Kernighan and Ritchie, The C Programming Language, PHI.
4. Byron Gottfried, Programming in C, Tata McGraw-Hill.
5. Kamathane, Programming in C, Oxford University Press

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Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

Lectures to be delivered: 55-65 Hrs

Course Objective

- To give fundamental knowledge Internet Technology and Protocol .
- To explain the basic concepts of Tools and tag used in HTML.
- To make the learners acquainted with the use of different theories related to A.S.P.

Learning Outcome

On the successful completion of the course, students will be able to;

- Have a clear understanding of Internet Technology and Protocol.
- Develop an in depth knowledge of Creating and saving HTML document techniques.
- Develop skills to get employment in ASP,Networking and HTML Field.

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to HTML: Basic HTML concepts, an overview of HTML markup.

What is good Web design, the process of Web publishing, implementation, the phases of Web site development, HTML's role in the Web, and issues facing HTML and the Web. **HTML overview:** the structure of HTML documents; document types, the <HTML>element; the <HEAD> element, the <BODY> element.

Links and Addressing: Linking basics, what are URLs; linking in HTML, anchor attributes,images and anchors, image maps; semantic linking with the <LINK> element, meta-information.

HTML and Images: The role of images on the Web, image preliminaries; imagedownloading issues, obtaining images, HTML image basics, images as buttons; and image maps.

Introduction to Layout: Backgrounds, Colors, and Text, Design requirements, HTMLapproach to Web design, fonts, colors in HTML, document-wide color attributes for <BODY>, and background images. Introduction to lists, tables, frames.

SECTION B

Basic Interactivity and HTML: Forms form preliminaries; the <FORM> element; formcontrols.

Dynamic HTML (DHTML): dynamic HTML and document object model, HTML andscripting access, rollover buttons, moving objects with DHTML, and ramifications of DHTML.

Style Sheets: style sheets basics, style sheet example, style sheet properties, positioning withstyle sheets.

Client Side Scripting: Java script: Introduction, documents, forms, statements, functions,objects, Event and event handling, Browsers and the DOM, JQuery: Syntax, Selectors, Events and AJAX methods.

Reference Books:

1. Deitel, Deitel and Nieto: Internet & WWW. How to program, Pearson Education.
2. Thomas A. Powell, HTML: The Complete Reference, Osborne/McGraw-Hill
3. E Stephen Mack, Janan Platt : HTML 4.0 , No Experience Required, BPB Publications.
4. "HTML Complete" by Sybex, BPB Publications, 2001.
5. Bayross, Web Enabled Commercial Applications Development Using HTML, DHTML, Java Script, Perl CGI, BPB Publication
6. Scott Mitchell, Designing Active Server Pages, O Rely, 2000.



BSDB1105P : PROJECT- I (ONE MONTH TRAINING BASED ON OFFICE AUTOMATION TOOLS)

Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

Note : Student Have to Submit Project Report on Office Automation Tools

Word: Design, create and modify a range of business documents, Displaying Different Views of a Document, Creating and Saving a Document, Selecting, Modifying, Finding and Replace Text, Align Text Using Tabs, Display Text as List Items. Apply Borders and Shading, Preview a document, and adjust its margins and orientation, Insert & Format a Table, Convert Text to a Table, Check Spelling and Grammar, Use the Thesaurus, Print with default or custom settings, Managing Lists – Sort, Renumber, Customize a List, Apply a Page Border and Colour, Sorting Table Data, Control Cell Layout, Perform Calculations in a Table, Creating Customized Formats with Styles and Themes. Create or Modify a Text Style, Create a Custom List or Table Style. Modifying Pictures & Picture Appearance Settings, Wrap Text around a Picture, Insert and Format Screenshots in a Document, Add WordArt , Use the Mail Merge Feature including Envelopes and Labels.

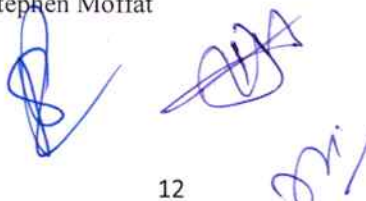
Excel: Construct a spreadsheet and populating Cell Data, Formatting Cells - Search Worksheet Data, Changing Fonts, Modify Rows and Columns, Managing Worksheets and Workbooks, Applying Formulas and Functions, Inserting Currency Symbols, Merging cells, Spell Check a Worksheet, Add Borders and Color to Cells, Printing options to output a chart, Modify the Layout of a Paragraph – Tabs, Headers, Footers, Apply Styles & Manage Formatting, Document Templates, Insert contents, page and section breaks, Apply Character Formatting.

Clip Art , Symbols, Illustrations, Set Page Breaks, Page Layout Options, Manage Workbook Views, Apply Cell and Range Names, Auto Sum in Cells, Calculate Data Across Worksheets, Sort or Filter Worksheet or Table Data, Create, Modify and Format Charts, Create, modify and format spreadsheets using the full range of the software formatting, features including conditional formatting for example Hide /unhide/freeze rows and columns.

PowerPoint: Salient features of POWER POINT, Starting ,Saving and quitting presentation, various components and elements of PowerPoint Package. Insert Clip Art and Graphs. Adding Multimedia Effects to the slide. Formatting and Editing Presentations. Adding Animation and Transition effects to the presentations.

Reference Books

1. Microsoft Office Word by Torben Lage Frandsen
2. Word 2010 Introduction by Stephen
3. Word 2010 Advanced by Stephen Moffat



BSDB1106L : SOFTWARE LAB – I
(Based on BSDB1103T and BSDB1104T)

Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BSDB1103T and BSDB1104T

Students are required to develop the following programs with internal documentation:

- 1 Assignments on Data types, Operators, Control Structure (if else, while, for, Do-while), jumping statements in C .**
 - i. Write a program to print the size of all the data types supported by C.
 - ii. Write a program to check whether the given number is a even number or not.
 - iii. Write a program to accept three numbers and find the largest among them.
 - iv. Write a program to count the different vowels in a line of text using switch.
 - v. Write a program to accept two numbers and perform various arithmetic operations (+, -, *, /) based on the symbol entered.
 - vi. Write a program to find factorial of a number.
 - vii. Write a program to print all prime numbers between any 2 given limits.
 - viii. Write a program to print all the Armstrong numbers between any 2 given limits.
 - ix. Write a program to demonstrate the use of break and continue statements.
- 2 Assignment on Arrays(one and two dimensional) and strings (string handling functions)**
 - i. Write a program to find largest element in an array.
 - ii. Write a program to search an element in an array.
 - iii. Write a program to find sum and average of numbers stored in an array.
 - iv. Write a program to check whether a string is a Palindrome.
 - v. Write a program to perform matrix addition.
 - vi. Write a program to perform matrix multiplication.
 - vii. Write a program to demonstrate string handling functions.
- 3 Assignment on Pointers and Array of Pointers**
 - i. Write a function to swap two numbers using pointers.
 - ii. Write a program to access an array of integers using pointers.
- 4 Assignment on Functions , Recursion and Storage Classes**
 - i. Write a program to demonstrate the methods of argument passing.
 - ii. Write a program to find the roots of a quadratic equation using function.
 - iii. Write a recursive program to find the factorial of a number.
 - iv. Write a recursive program to find the nth Fibonacci number.
 - v. Write a program to show the significance of different storage classes.
- 5 Assignment on Structures and Unions**
 - i. Write a program to create an employee structure and display the same.
 - ii. Write a program to create a student database storing the roll no, name, class etc and sort byname.

COMMON SYLLABUS WILL BE AS PER UG (BOARD OF STUDIES) IN FACULTY OF LANGUAGE (PUNJABI) PUNJABI UNIVERSITY, PATIALA

OR

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Academic Session 2022-23 → Faculty of Languages → Punjabi → Under Graduate Courses



BSDB1201T (B) : Elementary Punjabi ਭਾਗ-ਪਹਿਲਾ

COMMON SYLLABUS WILL BE AS PER UG (BOARD OF STUDIES) IN FACULTY OF LANGUAGE (PUNJABI) PUNJABI UNIVERSITY, PATIALA

OR

To Download the Syllabus, go to:

www.punjabiuniversity.ac.in → Important Links → Download Syllabus →

Academic Session 2022-23 → Faculty of Languages → Punjabi → Under Graduate Courses


Dr.

BSDB1202T : FUNDAMENTALS OF DBMS

Max Marks: 70

Marks: 35%

Maximum Time: 3 Hrs. Min Pass

Lectures to be delivered: 55-65 Hrs

Course Objective

- To give fundamental knowledge database and management system.
- To explain the basic concepts of architecture of database.
- To make the learners acquainted with the use of data management issues .

Learning Outcome

On the successful completion of the course, students will be able to;

- Have a clear understanding of dbms and normalization.
- Develop an in depth knowledge of various R.D.B.M.S and SQL Theories.
- Develop skills to get employment in DATABASE Field

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to DBMS: Definition of Database, Components of DBMS Environment, Database Schema and Instance. Three Level architecture of DBMS, Mapping between different levels, Data Independence.

Database languages: DDL, DML, DCL.

Keys : Super, candidate, primary, unique, foreign, composite, alternate

E-R model: Definition, Entity and Relationship, cardinality of a relationship, E-R Diagram Notations, Modeling using E-R Diagrams, Aggregation, Generalization, Specialization, Transforming E-R Model into Physical database Design, merits and demerits of E-R Modeling.

Record Based Logical Models: Hierarchical Model - Operations, Implementation, Advantages and Disadvantages. Network Model - Operations, Implementation, Advantages and Disadvantages, Relational Model - Operations, Implementation, Advantages and Disadvantages. Comparison between Hierarchical, Network and Relational Model

SECTION B

Normalization: Definition, Need, Process: Determinant, Functional Dependency, Full Functional Dependency, Partial Dependency, Transitive dependency, Multivalued Dependency, Join Dependency, Types of Normal Forms, Merits and Demerits of Normalization.

Transaction & Concurrency Control: Concept of transaction, ACID properties, Serializability, States of transaction, Concurrency Control – Locking techniques, time-stamp based protocols.

Database Security: Security requirements, database integrity, Granting & revoking privileges.



Reference Books:

1. JD Ullman, Garcia Molina, Database System: The Complete Book, Pearson Education.
2. Ramez Elmasri, Fundamentals of Database Systems, Pearson Education.
3. C.J Date, An Introduction to Database System, Pearson Education.
4. Parteek Bhatia, Database Management System.
5. Henry F. Korth, Database System Concepts, Tata McGraw-Hill.



BSDB1203T : FUNDAMENTALS OF WINDOWS AND SERVER ADMINISTRATION

Max Marks: 70

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65 Hrs

Course Objectives:

1. To learn and understand basic concepts of Windows Programming.
2. To learn basic of event handling in Windows.
3. To understand and work on desktop application development.
4. To expose students to current applications of Windows

Learning Outcome:

1. Review the fundamental concepts of Windows Programming
2. Evaluate the logic of different programming concepts.
3. Evaluate the techniques of application development in windows environment.
4. To evaluate different techniques to develop windows applications.

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Understanding Windows Programming Basics: Identify Windows application types, Implement user interface design.

Creating Windows Forms Applications: Create and handle events, Understand Windows Forms inheritance, understand how to create new controls and extend existing controls, Validate and implement user input, Debug a Windows-based application.

Creating Windows Services Applications: Create a Windows Services application, Install a Windows Services application.

Accessing Data in a Windows Forms Application: Understand data access methods for a Windows Application, Understand data bound controls.


Deploying a Windows Application: Understand windows application deployment methods, integrating data.

Windows 10: Installing, upgrading and migrating to Windows, Deploying Windows, Configuring disk and device drivers, Configuring, file access and printers on Windows client.

SECTION B

Network basics: Type of Networks, Topologies, Transmission media, Install UTP (Straight, Cross, Rollover Cables), IP Addressing, Subnetting, OSI Model, TCP/IP Model, Wireless Network, Network Devices.

Installation: Installation Server, Drivers, Working with windows server Devices, Troubleshooting



Devices & Drivers, Managing system updates.

Working With Disk Storage: Type of Disk Storage, Type of volumes, Implementing faulttolerance, Use disk management tools, Disk Quota, Troubleshooting disk management, Shadow copy.

Domain Controller: Install Active Directory, Manage Active Directory Component, Working with OU Structure, Working with Domain User account, Working with Domain Groups, Troubleshooting Active Directory.

Domain Name Services (DNS): Define Name resolution, Install DNS, Configure DNSClient, Manage and Troubleshoot DNS.

Dynamic Host Configuration Protocol: Configure DNS Server, Working With SuperScope, Configure DHCP Client, Manage and Troubleshoot DHCP Server.

Backup and Restore: Requirement for Backup and Recovery AD, Issue for AD Backup and Recovery, Steps for Backup and Recovery AD.

Reference Books:

1. Mark Minasi and John Paul Mueller Mastering, Window Server 2008
2. Danielle Ruest, Microsoft Windows Server 2008 "The Complete Reference", hyperlink "<http://www.google.co.in/search?tbo=p&tbm=bks&q=inauthor:%22Nelson+Ruest%22>"
3. MTA Windows of Fundamentals (Microsoft Official Academic Course) [Paperback] Microsoft Official Academic Course.
4. Windows 2010 Configuration : Microsoft Certified Technology Specialist Exam 70-680 [With Access Code] (Microsoft Official Academic Course) [Paperback] Craig Zacker (Author)
5. Window Server Administration fundamentals : Microsoft Official Academic Course



Max Marks: 70

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65 Hrs

Course Objective

Data Structure is considered as one of the fundamental paper towards a more comprehensive understanding of programming and application development. Student is expected to work towards a sound theoretical understanding of Data Structures and also compliment the same with hands on implementing experience.

Objectives of the course are:

- To be able to practically implement the data structures like stack, queue, array etc.
- To understand and implement different searching and sorting

Learning Outcome

- Understand the need for Data Structures when building Applications.
- Appreciate the need for optimized algorithm.
- Able to walk through insert and delete for different data techniques.
- Improve programming skills.

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Basic concepts and notations: Types of data structures, Data structure operations, Mathematical notations and functions, Algorithmic complexity, Big 'O' notation, Time and space trade off.

Arrays: Linear array, representation of array in memory, traversing linear array, insertion and deletion in an array, Two-dimensional array, row major and column major orders, sparse matrix.

Stacks: Representation of stacks in memory (linked and sequential), operations on stacks, Applications of stacks: string reversal, parentheses matching.

Queues: Representation of queues in memory (linked and sequential), operations on queues, insertion in rear, deletion from front.

SECTION B

Linked list: Representation of linked list using static and dynamic data structures, insertion and deletion of a node from linked list, searching in link list, searching in sorted link list.

Trees: Definition and basic concepts, linked representation and representation in contiguous storage, binary tree, binary tree traversal, Binary search tree, searching, insertion and deletion in binary search tree.

Searching and sorting algorithms: Linear and binary search, bubble sort, insertion sort, selection sort, quick sort, merge sort.

20

Reference Books:

1. Seymour Lipschutz, Theory and Practice of Data Structures, McGraw-Hill.
2. Vishal Goyal, Lalit Goyal, Pawan Kumar, A Simplified Approach to Data Structures, Shroff Publications.
3. Y. L. Tenenbaum, and A. J. Augenstein, Data Structures using C and C++, PHI.
4. Robert Sedgewick, Algorithms in C, Pearson Education.



BSDB1205L : SOFTWARE LAB – II
(Based on BSDB1202T and BSDB1203T)


Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper B.VSD-122 and 123. Students are required to perform following activities with internal documentation:

- 1 Installation Window 2010, upgrading Windows 2010. Deploying Windows 2010.
- 2 Configuring disk and device drivers, Configuring file access, Install printers on Window 2010 client.
- 3 Configuring network connectivity and wireless network connections.
- 4 Install UTP(Straight, Cross, Rollover Cables), IP Addressing with LAN, Subnetting, Implement Wireless Network with LAN.
- 5 Installation Server 2008, Drivers, Working with windows Devices, Troubleshooting Devices & Drivers, Managing system updates.
- 6 Implementing fault tolerance, Use disk management tools, Disk Quota, Troubleshooting disk management, Shadow copy.
- 7 Install Active Directory, Manage Active Directory Component, Working with OU Structure, Working with Domain User account, Working with Domain Groups, Troubleshooting Active Directory.
- 8 Configure Auditing, Enable Auditing, Working with Security logs, Install terminal services, Configure terminal services, Working with Remote desktop, Working with telnet, Working with SSH, Manage terminal Services, Network Traffic Monitoring.
- 9 Install DNS, Configure DNS Client, Manage and Troubleshoot DNS.
- 10 Configure DNS Server, Working With Super Scope, Configure DHCP Client, Manage and Troubleshoot DHCP Server.
- 11 Configure VPN, Manage and Troubleshoot on VPN.
- 12 Implement and Manage Group Policy, Creating GPO's, Linking GPO's to Active Directory,



BSDB1206L : SOFTWARE LAB – III
(Based on BSDB1204T)

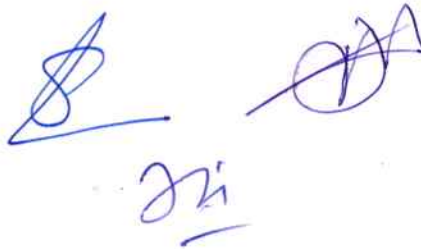
Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BSDB1204T. Students are required to develop the following programs in C with internal documentation:

- 1 Program to insert an element from an array.
- 2 Program to delete an element from an array.
- 3 Program to store an array using sparse representation.
- 4 Program to apply various operations on stack.
- 5 Program for parenthesis matching using stack.
- 6 Program for String reversal using stack.
- 7 Program to insert and delete nodes in a queue.
- 8 Program to insert and delete nodes in a linked list.
- 9 Program to search a node in a linked list.
- 10 Program to insert or delete node in a binary tree.
- 11 Program to traverse binary tree.
- 12 Program for implementing linear search.
- 13 Program for implementing binary search.
- 14 Program for implementing Bubble sort.
- 15 Program for implementing Selection sort.
- 16 Program for implementing Insertion sort.
- 17 Program for implementing Quick sort.
- 18 Program for implementing Merge sort.

The block contains three handwritten marks in blue ink. On the left is a stylized signature. In the center are the initials 'Ji' with a horizontal line underneath. On the right is another stylized signature.

BSD1207T : Drug Abuse : Problem, Management and Prevention**

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Academic Session 2022-23 → Common for All



**OUTLINES OF TESTS,
SYLLABI AND COURSES OF READING**

FOR

**B. Voc. (SOFTWARE DEVELOPMENT)
Second Year
(THIRD AND FOURTH SEMESTER)**

Programme Code: BSDB3PUP

FOR

Session 2023-24

(For students admitted in session 2022-23 only)



PUNJABI UNIVERSITY PATIALA
(Established under Punjab Act no. 35 of 1961)

[Handwritten signatures and initials in blue ink]

**SYLLABUS
OUTLINE OF PAPERS AND TESTS
FOR
B.VOC (Software Development) Second Year (3rd Semester)**

**For Session 2023-24
Programme Code: BSDB3PUP**

Code	Title of Paper	Credits	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BSDB2101T	Discrete Mathematics	4	60	40	100	3
BSDB2102T	Software Engineering	4	60	40	100	3
BSDB2103T	Programming with Java	4.5	60	40	100	3
BSDB2104T	Programming using C++	4.5	60	40	100	3
BSDB2105L	Software Lab – IV	4.5	50	50	100	3
BSDB2106L	Software Lab – V	4.5	50	50	100	3
BSDB2107L	Software Lab – VI	4	50	50	100	3
BSDB2108T	Environment Studies and Road Safety Awareness*		70	30	100	3
	Total	30	390	310	700	

1. The breakup of marks for the Practical will be as under:

i.	Internal Assessment	50 Marks
ii.	Viva Voce (External Evaluation)	20 Marks
iii.	Lab Record Program Development and Execution(External Evaluation)	30 Marks

1. The breakup of marks for the internal assessment for theory Subjects will be as under:

i.	Average of Both Mid Semester Tests / Internal Examinations	16 Marks
ii.	Attendance	8 Marks
iii.	Written Assignment/Project Work etc.	16 Marks

* BSDB2108T: Environment Studies and Road Safety Awareness is a compulsory qualifying paper as per university guidelines, the marks for this paper are not counted for the total marks for the degree.

SYLLABUS
OUTLINE OF PAPERS AND TESTS
FOR
B.VOC (Software Development) Second Year (4th Semester)
For Session 2023-24, 2024-25 & 2025-26
Programme Code: BSDB3PUP

Code	Title of Paper	Credits	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BSDB2201T	Python	4	60	40	100	3
BSDB2202T	Web Development Using PHP and MYSQL	4	60	40	100	3
BSDB2203T	Content Management System	4	60	40	100	3
BSDB2204L	Software Lab – VII	4	50	50	100	3
BSDB2205P	Project –II	6	50	50	100	3
BSDB2206L	Software Lab – VIII	4	50	50	100	3
Total		30	390	310	700	

1. The breakup of marks for the practical will be as under:

i.	Internal Assessment	50 Marks
ii.	Viva Voce (External Evaluation)	20 Marks
iii.	Lab Record Program Development and Execution(External Evaluation)	30 Marks

1. The breakup of marks for the internal assessment for theory Subjects will be as under:

i.	Average of Both Mid Semester Tests / Internal Examinations	16 Marks
ii.	Attendance	8 Marks
iii.	Written Assignment/Project Work etc.	16 Marks

BSDB2101T: DISCRETE MATHEMATICS

Max Marks: 60

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65 Hrs

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Set theory: (Basic definitions), union, intersection, complement, difference of sets, DeMorgan's Laws, Subsets, power sets, Equal vs. equivalent sets, Cartesian products

Relations and functions: Symmetry, transitivity, reflexivity, Equivalence classes, Congruence, Functions, domain, range, co-domain of functions, One-to-one, onto function, inverse of a function.

SECTION B

Permutations, Combinations, Binomial Theorem, Pascal's Triangle, Towers of Hanoi, Recurrence Relations, Graphs and Trees.

Groups: Definitions, Examples, Properties, Semigroups, Monoids, Sub Groups, Normal SubGroup, Homomorphism

Reference Books:

1. Tremblay and Manohar, Discrete Mathematical Structures, Tata McGraw Hill
2. Discrete Mathematics Maggard, Thomson
3. Semyour Lipschutz, and Varsha Patil, Discrete Mathematics, Schaum's Series Tata McGraw-Hill.
4. Kolman, Busby and Ross, Discrete Mathematical Structures, Prentice Hall.
5. C. L. Liu, Elements of Discrete Structures, McGraw-Hill.
6. K. Rosen, Discrete Mathematics and its application, McGraw-Hill.
7. G. Shankar Rao, Discrete Mathematical Structure, New Age International.
8. D.P.Acharjaya and Sreekumar, Fundamental Approach to Discrete Mathematics, New Age International.



BSDB2102T : SOFTWARE ENGINEERING

Max Marks: 60

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65 Hrs

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to Software: Definition, Software characteristics, Software components, Software Applications.

Introduction to Software Engineering: Definition, Software Engineering Paradigms, waterfall method, prototyping, Interactive Enhancement, The Spiral model, Fourth Generation Technique.

Software Requirement Specification (SRS): Problem analysis, structuring information, Data flow diagram and data dictionary, structured analysis, Characteristics and component of (SRS).

Planning a Software Project: Cost estimation, uncertainties in cost estimation, Single variable model, and COCOMO model.

SECTION B

System Design: Design Objectives, Design Principles, problem, Partitioning, Abstraction, Top Down and Bottom-up techniques, Structure Design, Structure Charts, Design Methodology, Design Review.

Detailed Design: Module specification, Specifying functional module, data abstraction.

Coding: Coding by Top-down and Bottom-up, Structured Programming, Information Hiding, Programming style, Internal Documentation.

Reference Books:

1. Roger S Pressman, Software Engineering – A Practitioner's Approach, Tata McGraw- Hill.
2. I. Sommerville, Software Engineering, Pearson Education.
3. Pfleeger, Software Engineering, Pearson Education.
4. Carlo Ghezzi, Mehdi Jazayari and Dino Mandrioli, Fundamentals of Software Engineering, Prentice Hall.
- 5.



BSDB2103T : PROGRAMMING WITH JAVA

Max Marks: 60
Min Pass Marks: 35%

Maximum Time: 3 Hrs.
Lectures to be delivered: 55-65 Hrs

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction: Features of Java, Java Development Kit, Java Virtual Machine, Understanding class path, Concepts of Classes and Objects, Constructors, Constructor Overloading.

Inheritance: Types of Inheritance, Use of Super keyword, Method Overriding, Function Overloading.

Interfaces and Packages: Interfaces and implementing multiple inheritance through interfaces, Packages.

Multithreaded Programming: Creating Threads, Life cycle of thread, Thread priority, Thread synchronization, Inter-thread communication.

SECTION B

Exception Handling: Types of errors, Exception classes, Exception handling in java, use of try, catch, finally, throw and throws.

Event Handling: Event Classes, Event Sources, Event Listener Interfaces, Adapter Classes.

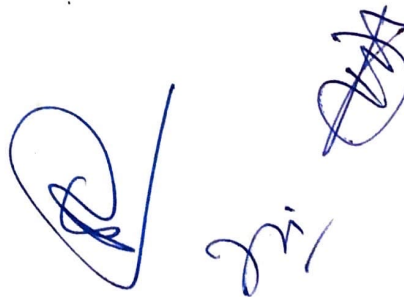
Swing: Features, Swing Packages, Components and containers, Working with Swings, User Interface

Components: JApplet, Label, Button, CheckBox, TextField, TextArea, adioButton, Panel, ScrollPane, List. Types of Layouts : FlowLayout, BorderLayout, GridLayout, CardLayout, GridbagLayout. Using Dialogs, JOptionPane.

JDBC: JDBC Fundamentals, Establishing Connectivity and working with connection interface.

Reference Books:

1. Patrick Naughton and Herbert Schildt, The Complete Reference Java 2, Tata McGraw Hill.
2. Gilbert, Stephan D. and William B. Hccarthy, Object Oriented Programming in Java , The Waite Group Press, 1997.
3. Mary Campione and Kathy Walrath, The Java Tutorial, Addison – Wesley.
4. Cay S. Horstmann, and Gary Cornell, Core Java 2 : Fundamentals Vol. 1, Pearson Education.
5. Balagurusamy, Programming with Java : A Primer, Tata McGraw Hill.
6. Jeffry A. Borrer, Object Oriented Programming with Java-An Ultimate Tutorial,



BSDB2104T : PROGRAMMING USING C++

Max Marks: 60

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65 Hrs

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction : Basics of Object Oriented Programming (OOP), Difference between C & C++, Manipulators, Storage classes.

Classes and Objects: Class Declaration and Class Definition, Defining member functions, inline functions, Nesting of member functions, Members access control. this pointer. Objects: Object as function arguments, array of objects, functions returning objects, Const member.

Static data members and Static member functions, Friend functions and Friend classes

Constructors: properties, types of constructors, Dynamic constructors, Constructor overloading.

Destructors: Properties, Virtual destructors. Destroying objects. Rules for constructors and destructors. Array of objects. Dynamic memory allocation using new and delete operators, Nested and container classes, Scopes: Local, Global, Namespace and Class.

Inheritance: Defining derived classes, Types of inheritance, types of derivation- public, private, protected, function redefining, constructors in derived class, Types of base classes – abstract and virtual.

SECTION B

Operator overloading: rules for operator overloading overloading binary operator, overloading unary operators, Function overloading.

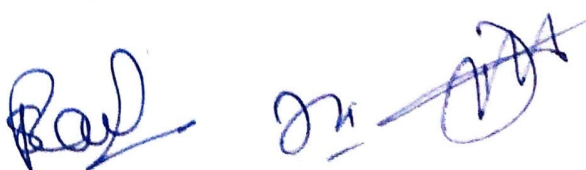
Polymorphism : virtual functions, late binding, pure virtual functions and abstract base class Difference between function overloading, redefining, and overriding.

Templates: Generic Functions and Generic Classes, Overloading of template functions.

Exception Handling : catching class types, handling derived class exceptions, catching exceptions, restricting exception, rethrowing exceptions, terminate and unexpected, uncaught exceptions.

Reference Books:

1. E. Balaguruswamy, Object Oriented Programming with C++, Tata McGraw-Hill.
2. Deitel & Deitel, "C++ How to Program", Pearson Education.
3. Herbert Schildt, The Complete Reference C++, Tata McGraw-Hill, 2001.
4. Robert Lafore, Object Oriented Programming in C++, Galgotia Publications,
5. Bjarne Strastrup, "The C++ Programming Language", Addison- Wesley Publication.
6. E. Balagurusamy, Object Oriented Programming with C++, Tata McGraw-Hill.
7. Anshuman Sharma, Learn Programming in C++, Lakhanpal Publishers.



BSDB2105L : SOFTWARE LAB – IV (Based on BSDB2103T)

Max Marks: 50

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BSDB2103T . Students are required to develop the following programs with internal documentation:

1. WAP to demonstrate the concept of class.
2. WAP that illustrates the use of constructor.
3. WAP for constructor overloading.
4. WAP for single inheritance using super keyword.
5. WAP for multilevel inheritance.
6. WAP to demonstrate method overriding.
7. WAP that implements multiple inheritance through interface.
8. WAP to demonstrate importing multiple packages.
9. WAP to demonstrate creating threads by extending Thread class.
10. WAP to demonstrate creating threads by implementing Runnable interface.
11. WAP that illustrates the use of exception handling.
12. WAP to demonstrate the event handling mechanism using KeyListener interface.
13. WAP to demonstrate the creation of Swing application.
14. WAP to demonstrate the use of various Swing components.
15. WAP to implement FlowLayout.
16. WAP to implement GridLayout.

Activity – II

1. Write code for event handling, database connectivity and report generation.

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Max Marks: 50

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BSDB2104T . Students are required to develop the following programs with internal documentation:

1. Write a program to find area of rectangle using the concept of classes & object.
2. Write a program to implement the concept of array of object.
3. Write a program to show the use of friend function.
4. Write a program to show the use of constructor overloading.
5. Write a program to show the use of copy constructor.
6. Write a program to show the use of destructors.
7. Write a program to show the use of virtual function.
8. Write a program to implement the concept of multilevel inheritance.
9. Write a program to implement the concept of multiple inheritance.
10. Write a program of unary operator overloading.
11. Write a program of Binary operator overloading.
12. Write a program to swap two values independent of type of the variable using function template.
13. Write a program to illustrate how an exception is handled using try catch block using throw statements.
14. Write a program to demonstrate how to insert and extract an object to and from data files.
15. Write a program to count the total number of account objects in a file and then display information of a particular account object.



BSDB2107L : SOFTWARE LABS – VI (Internet Lab)

Max Marks:50

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

In the Internet lab Student has to learn and perform activities related to:

1. Web Browsing
2. Internet
3. connect with internet
4. modem and Router
5. LAN, MAN and WAN
6. WWW
7. Internet Explorer, Keyboard Shortcuts
8. Cookies, Browser Terms in Netscape Navigator and Internet Explorer.
9. Search and save Data from internet
10. Email?
11. Create Email.
12. Send email.
13. Download Data from internet
14. Attach files with email.


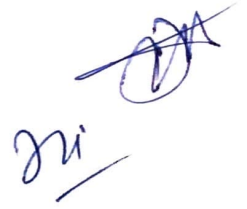
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BSDB2108T: Environment Studies and Road Safety Awareness *

To Download the Syllabus, go to:

www.punjabiuniversity.ac.in → Important Links → Download Syllabus →

Academic Session 2023-24 → Common for All

BSDB2201T : PYTHON

Max Marks: 60

Lecture to be delivered: 55-65

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to Python: Python Installation and Working with Python Understanding Python variables Python basic Operators Understanding python blocks.

Data Types: Declaring and using Numeric data types: int, float, complex Using string data type and string operations Defining list and list slicing, Use of Tuple data type.

Program Flow Control: Conditional blocks using if, else and elif Simple for loops in python For loop using ranges, string, list and dictionaries Use of while loops in python Loop manipulation using pass, continue, break and else Programming using Python conditional and loops block.

Functions Modules and Packages: Organizing python codes using functions Organizing python projects into modules Importing own module as well as external modules Understanding Packages Powerful Lamda function in python Programming using functions, modules and external packages.

SECTION-B

String List and Dictionary Manipulations: Building blocks of python programs Understanding string in build methods List manipulation using in build methods Dictionary manipulation Programming using string, list and dictionary in build functions.

File Operation: Reading config files in python Writing log files in python Understanding read functions, read(), readline() and readlines() Understanding write functions, write() and writelines() Manipulating file pointer using seek Programming using file operations.

Reference Books:

1. Downey, Allen B. (May 2012). Think Python: How to Think Like a Computer Scientist (Version 1.6.6 ed.). ISBN 978-0-521-72596-5.
2. Hamilton, Naomi (5 August 2008). "The A-Z of Programming Languages: Python". Computerworld. Archived from the original on 29 December 2008. Retrieved 31 March 2010.
3. Lutz, Mark (2013). Learning Python (5th ed.). O'Reilly Media. ISBN 978-0-596-15806-4.
4. Pilgrim, Mark (2004). Dive Into Python. Apress. ISBN 978-1-59059-356-1.
5. Pilgrim, Mark (2009). Dive Into Python 3. Apress. ISBN 978-1-4302-2415-0.

BSDB2202T : WEB DEVELOPMENT USING PHP AND MYSQL

Max Marks: 60

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65 Hrs

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

PHP: A Brief History of PHP, Introduction to PHP, Syntax, Scope of Variables: Global and Local Variables, Data types, Control Statements, Operators- Arithmetic, Logical, Relational and Bit-Wise operators. Functions, JavaScript functions Local and Global scope, Calling Functions, Defining a Function, Built-in functions. Installing and Configuring PHP on Windows. Installing web site on web server-Apache, WAMP. Creating Arrays, Multidimensional Arrays, Cookies. Document Object Model and Finding Elements. Basic Events, Standard Event Model.

String: Quoting String Constants - Printing Strings - Accessing Individual Characters -Cleaning Strings - Encoding and Escaping -Comparing Strings - Manipulating and Searching Strings - Regular Expressions.

SECTION B

Connecting to MySQL from PHP: Server side programming, Client Side Scripting, WAMP tool, HTML Form Fields (Controls), PHP Form Handling, Form Validations.

Objects: Terminology - Creating an Object - Accessing Properties and Methods - Declaring a Class - Introspection - Serialization Extending PHP.

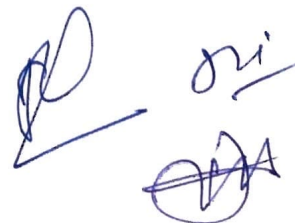
AJAX: Introduction, Identifiers, Variables, Defined Constants, Operators and Expressions. HTML Form Fields (Controls).

Architectural Overview: The pval/zval Data Type, Parameter Handling, Returning Values, References, Global Variables.

Introduction to MySql: Data Types, Sql Queries :Creating Database, Creating Table, Inserting, Updating, Deleting Data. Searching, Sorting , Altering table.

Reference Books:

1. Robin Nixon, Learning PHP, MySQL, and JavaScript, Shroff/O'Reilly.
2. Raj Kamal, Internet and Web Technologies, Tata McGraw-Hill.
3. Matt Zandstra, Sams Teach Yourself PHP in 24 Hours, Sams Publishing.
4. Steven M. Schafer, HTML, CSS, JavaScript, Perl, Python and PHP, Wiley India



BSDB2203T : CONTENT MANAGEMENT SYSTEM

Max Marks: 60
Min Pass Marks: 35%

Maximum Time: 3 Hrs.
Lectures to be delivered: 55-65 Hrs

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction: Open Source vs Closed Source , Examples of OSS. What is Joomla? Features of Joomla Understanding WAMP Installing & Configuring Joomla:Installing WampServer ,Creating a Website Folder , Copy the Joomla Files ,Configuring the Joomla Web Installer Understanding The Frontend and Backend of Joomla, Login as a Super User,The Joomla Control Panel Creating Content: Creating Categories , Creating Categorized or Uncategorized Articles , Inserting Images/Graphics Into Articles , Inserting the Read More Option into Articles , Filtering & Sorting Articles, Featuring Articles on the Home Page ,Viewing Your Website , Setting the Options for Articles

SECTION B

Adding Menu Items: Adding a Single Article Menu Item, Adding a List All Categories Menu Item , Changing the Layout From Blog Layout , Adding a Category List Menu Item ,Changing the Menu Order, Joomla Extension Types: What is a Component? What is a Module? What is a Plugin? What is a Template? What is Language? Adding Modules:Enabling Module Position Viewing, Viewing the Module Positions, Changing Module Positions ,Logging in From the Frontend to Edit Content , Adding the Search Module, Creating an HTML Module Joomla Templates: Viewing Joomla Templates, Types of Templates, Default Joomla Templates, Changing the Default Template for a Website, Previewing a Joomla Template, Installing a Template, Changing the Logo/Header, Installing a Photo Gallery Component Creating Folders for the Photos Uploading the Photos, Adding a Gallery Menu Item About Akeeba Backup Installing, Akeeba Backup Configuring Akeeba Backup Creating a Backup, Copy of Your Website, Downloading Your Backup Archives.

Reference Books:

1. Jennifer Marriott and Elin Waring, The Official Joomla! Book Addison-Wesley Professional.
2. Ric Shreves, Joomla! Bible, Wiley.

BSDB2204L : SOFTWARE LAB – VII (Based on BSDB2202T and BSDB2203T)

Max Marks: 50

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BSDB2202T. Students are required to do followings:

Lab Assignments - Installing and Configuring PHP on Windows, Installing web site on web server- Apache, WAMP. HTML tag based, Advanced HTML based, Database, Simple PHP, Advanced PHP, HTML-DBMS-PHP, Dynamic Web Pages/Sites.

Creation of Web pages using HTML, DHTML.

Creation of Web pages using JavaScript.

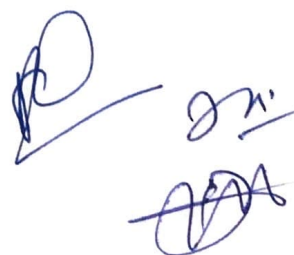
Creating web pages using PHP.

Programs:

1. Write a program to print any text in PHP.
2. Write a program to print the data types of PHP i.e. using String, Integer, Floating point numbers, Boolean, Array, Object, NULL.
3. Write a program of arithmetic operators.
4. Write any program of using conditional Statements.
5. Write a program to implement switch case in PHP.
6. Write a program to add two numbers using functions.
7. Write a program to implement while loop .
8. Print different values using for each loop.
9. Create a Date From a String With PHP strtotime() function
10. Write a program to open, read and close file in PHP.
11. Write a function to connect and create database using PHP.
12. Write a program to implement mail function.
13. Write a program to implement WHERE clause in php MySQL?
14. Write a program to implement file upload using PHP.
15. Write a program to start, store and delete session variable.

Reference Books:

1. WAMP Tools, LAMP Tools,
2. Apache Web Server, PHP compiler



BSDB2205P : PROJECT II - 3 Month Industrial Training

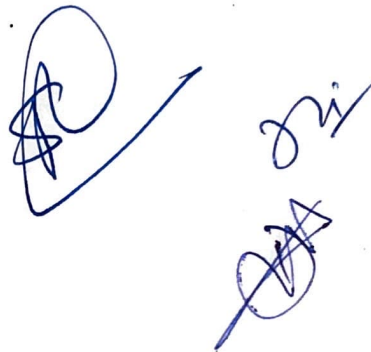
Max Marks: 50

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

In This course student will have to do Industrial training on live project for 3 Months. The Industry should be ISO certified. In Last Student have to Submit Project Report of their training to the supervisor.

- | | |
|-------------------|----------|
| a. Project Report | 25 Marks |
| b. Viva Voce | 25 Marks |

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BSDB2206L: SOFTWARE LAB – VIII (Based on BSDB2201T: PYTHON)

Max Marks: 50

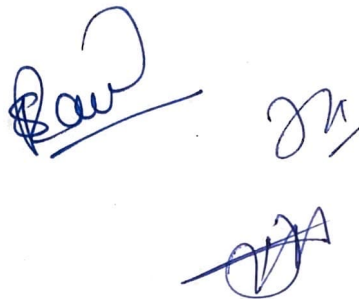
Min Pass Marks: 35%

Maximum Time: 3 Hrs.

This laboratory course will comprise as exercises to supplement what is learnt under paper
BSDB2201T: **PYTHON**

*Maximum Marks for Continuous Assessment: 50

Maximum Marks for University Examination: 50

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**OUTLINES OF TESTS,
SYLLABI AND COURSES OF READING**

FOR

**B.Voc. (SOFTWARE DEVELOPMENT)
~~Third~~ Year
(FIFTH AND SIXTH SEMESTER)**

Programme Code: BSDB3PUP

FOR

Session 2023-24, 2024-25



PUNJABI UNIVERSITY PATIALA
(Established under Punjab Act no. 35 of 1961)

Rawl

ju *SA*

B.VOC (Software Development) 3rd Year (Semester V)
Session 2023-24, 2024-25


Code	Title of Paper	Credits	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BSDB3101T	Presentation Skills and Personality Development	4	60	40	100	3
BSDB3102T	Management Information System	4	60	40	100	3
BSDB3103T	Web Development using ASP.Net	4.5	60	40	100	3
BSDB3104T	Software Testing Concepts and Tools	4.5	60	40	100	3
BSDB3105L	Software Lab – VIII	4.5	50	50	100	3
BSDB3106L	Software Lab – IX	4.5	50	50	100	3
BSDB3107T	Workshop	4	50	50	100	3
	Total	30	390	310	700	

1. The breakup of marks for the practical will be as under:

i.	Internal Assessment	50 Marks
ii.	Viva Voce (External Evaluation)	20 Marks
iii.	Lab Record Program	30
	Development and Execution (External Evaluation)	Marks

2. The breakup of marks for the internal assessment for theory Subjects will be as under:

i.	Average of Both Mid Semester Tests / Internal Examinations	16 Marks
ii.	Attendance	8 Marks
iii.	Written Assignment/Project Work etc.	16 Marks




BSDB3101T: Presentation Skills and Personality Development

Max. Marks: 60 Marks

Min. Pass Marks: 35%

Min. Time: 3hrs

Lectures to be delivered: 55-65 Hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B and the entire section C.

Section – A : Literature

Prescribed Text : Popular Short Stories.

From the prescribed text the following stories are to be

read: A Cup of Tea – Katherine Mansfield.

The Open Window – H.H. Munro („Saki“)

The Gift of the Magi – O. Henry

The Ant and the Grasshopper – W. Somerset Maugham

The Necklace – Guy De Maupassant

Section B : Grammar and Writing Skills Tenses

Voice Narration

Letter Writing – Formal

Resume/C.V. Writing

Report Writing

Note making, Summarizing and Abstracting

Books Recommended:

The Written Word by Vandana R. Singh : Oxford University Press.

Popular Short Stories : Oxford University Press

Oxford Practice Grammar by John Eastwood : Oxford University Press

Oxford Advanced Learner's Dictionary.



BSDB3102T: Management Information System

Max Marks: 60

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65 Hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION-A

Management Information system: Meaning and definition, Role of information system, Nature and scope of MIS.

Introduction to systems: System related concepts, elements of a system, and types of system. **Information systems:** Definition and characteristics, Types of Information, Role of Information in Decision making, general model of human as an information processor .
Sub-Systems of an Information system: EDP and MIS, management levels, EDP/MIS/DSS.

An overview of Management Information System: Structure and classification of MIS, Components of MIS, Framework for understanding MIS: Robert Anthony's hierarchy of management activity, Information requirements and levels of management.

Decision making concept, types of decisions, methods of choosing among alternatives, Role of MIS in decision making.

Simon's model of decision making, Structured and unstructured decisions.

SECTION-B

Decision Support Systems: Definition and characteristics, components of DSS, MIS versus DSS, Tools and Models for decision support. Simon's model of decision making, Structured and unstructured decisions

Development of MIS: Stages in the development of MIS, System development approaches: Waterfall model, Prototyping, Iterative enhancement model, Spiral model.

Functional MIS: Marketing MIS, Financial MIS, Production MIS, Personnel MIS.

Text Book:

1. D.P. Goyal, "Management Information Systems: Managerial Perspectives", Macmillan India Ltd.

Reference Books:

1. Robert G. Murdick, Joel E. Ross, James R. Claggett, "Information Systems for Modern Management", Prentice Hall of India Pvt. Ltd.
2. Gordon B. Davis, M.H. Olson, "Management Information Systems: Conceptual Foundations, Structure & Development", McGraw-Hill Book Co.
3. W.S. Jawadekar, "Management Information Systems", Tata McGraw-Hill Publishing Co.

BSDB3103T: Web Development Using ASP.NET

Max Marks: 60

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65 Hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION –A

Introduction to .net framework: - Genesis of .NET, Features, Advantages and disadvantages of .net framework. Common Language Runtime:-Common Type System, Common Language Specification, .Net binaries, Microsoft Intermediate Language, Meta Data, .Net types and .net namespaces.

BASICS OF ASP. NET: - Introducing ASP .NET– Creating ASP .NET applications using command line compiler and visual studio .net IDE. Web forms, Standard Controls: - Display information, Accepting user input, Submitting form data, displaying images, using the panel control, using the hyperlink control.

Validation Controls: Using the required field validation control, using the range validator Control using the compare validator control, using the regular expression validator control, using the custom validator control, using the validation summary controls.

SECTION –B

Rich Web Controls: -Accepting file uploads, displaying a calendar, Displaying advertisement, displaying different page views, displaying a wizard. List Controls: Dropdown list control, Radio button list controls, list box controls, and bulleted list Controls, custom list controls. Grid View Controls: Grid view control fundamentals, using field with the grid view control, working with grid view control events extending the grid view control. Debugging, caching and deploying ASP .NET pages.

Master pages: - Designing Website with Master Pages: Creating master pages, Modifying master page content, Loading master page dynamically. ASP.NET security, localizing ASP .NET applications.

ADO.NET:- Changes from ADO to ADO.NET, ADO .NET Managed Providers – OleDb and SQL Managed Providers – OleDb Data Adapter Type. SQL Data Source Control: Creating database connections, executing database commands, Using ASP.NET parameters with the SQL data source controls, programmatically executing SQL data source commands, Caching database data with the SQL data Source controls.

Reference Books :

1. ASP.NET 3.5: Stephen Walther, Pearson Education, 2005
2. Andrew Troelsen – “C# and the .Net Platform” – Apress – 2001.(Unit I and II)
3. David S. Platt – “Introducing .Net” – Microsoft Press – 2002
4. ASP.NET Bible” – Mridula Parihar – Wiley-Dreamtech India Pvt. Ltd



BSDB3104T: Software Testing Concepts and Tools

Max Marks: 60

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

Lectures to be delivered: 55-65 Hrs

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION –A

Fundamentals of Testing: Human and errors, Testing and Debugging, Objectives of Testing, General Principles of Testing, Roles of Tester, Software Quality Assurance (SQA)

Testing Techniques: Structural versus Functional Technique Categories, Verification versus Validation, Static versus Dynamic Testing ,Examples of Specific Testing Techniques.

Testing Technique: Equivalence Partitioning, Boundary value analysis, cause-effect graphing technique, Decision Table testing, Error Guessing

SECTION –B

Create the Test Plan :Prerequisites to test planning, Understand the Characteristics of the Software Being Developed, Build the Test Plan ,Write the Test Plan

Manual Testing: Basics of manual testing, Test Cases, Test Results, Variations of Test cases, Test Plan, Purpose and components of Test plan. Designing of test cases, Execution of test cases, Bug Life Cycle, Bug reporting, and Agile Methodology

Automation testing: Fundamentals of Automation Testing, Drawbacks of manual testing, Challenges of software test automation, Automation Lifecycle, Tools used for automation: Quick Test Professional (QTP), LoadRunner, WinRunner , TestComplete, Selenium

Reference Books:

1. Software Testing Foundations, Andreas Spillner, Tilo Linz, Hans Schaefer, Shoff Publishers and Distributors
2. Software Testing: Principles and Practices by Srinivasan D and Gopalswamy R, PearsonEd, 2006
3. Foundations of Software Testing by Aditya P. Mathur – Pearson Education custom edition 2000
4. Testing Object Oriented Systems: models, patterns and tools, Robert V Binder, Addison Wesley, 1996
5. Software Engineering – A practitioner's approach by Roger S. Pressman, 5thEdition, McGraw Hill
6. The art of software testing by GJ Myers, Wiley.



BSDB31015L: Software Lab – VIII (Based on BSDB3103T)

Max Marks: 50

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

This laboratory course will comprise as exercises to supplement what is learnt under paper BSDB3103T.

1. Write a program to show the use of standard controls in a web form.
2. Write a program containing the list controls and its functions:
3. Write a program to show the use of file upload and calendar control.
4. Write a program to display advertisement on a web page.
5. Write a program to create an admission form for a college.
6. Write a program to demonstrate the master page.
7. Write a program to create login page which accepts user name and password, then check for authentication of the user.
 - 1- Write a program that demonstrate a textbox for a user input name and validate it for

Required Field Validation

1. Create a user control that displays the current date and time. Include it in a Web Form and refresh it each time a button is clicked.
2. Create a user control that receives the user name and password from the user and validates them. If the user name is "Radiant" and the password is "asp.net" then the user is authorized, otherwise not.
11. Write a program to demonstrate ADO.NET controls
12. Write a program to demonstrate submits data in database by using the ado.net controls.



BSDB31016L: Software Lab – IX (Based on BSDB3104T)

Max Marks: 50

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

This laboratory course will comprise as exercises to supplement what is learnt under paper BSDB3104T.

Test Administration

- Test Planning
- Customization of the Test Process
- Budgeting
- Scheduling

Create the Test Plan

- Prerequisites to test planning
- Understand the Characteristics of the Software Being Developed
- Build the Test Plan
- Write the Test Plan
- Test Cases
- Test case Design
- Building test cases
- Test data mining
- Test execution
- Test Reporting
- Defect Management

Test Web site and write different test cases and their result.

Two handwritten signatures in blue ink. The one on the left is a stylized signature, possibly 'Rao', and the one on the right is a more complex, cursive signature.

BSDB31017T: Workshop – Personality Development

Max Marks: 50

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

This laboratory course will comprise as exercises to supplement what is learnt under paper BSDB3101T.

1 : Reading Skills (10 Marks)

Reading at various speeds (slow, fast, very fast); reading different kinds of texts for different purposes (for example, for relaxation, for information, for discussion at a later stage etc.); reading between the lines.

Class activities :

- Newspaper reading sessions
- Diary Entry
- Class Presentations.

1- : Speaking Skills (20 Marks)

In speaking achieving desired clarity and fluency; manipulating paralinguistic features of speaking (voice quality, pitch, tone etc.) pausing for effectiveness while speaking; talk-oriented, interpersonal, informal and semiformal speaking; task-oriented, interpersonal, informal and semiformal speaking; making a short classroom presentation.

Class Activities

- Correct pronunciation of the word list (The Written Work – Vandana R. Singh) using the Oxford Advanced Learner's Dictionary.
- Group Discussion : Use of Persuasive strategies including some rhetorical devices (for emphasizing, for instance; being polite and firm handling questions and talking in criticism of self; turn-taking strategies and effective intervention; use of body language)
- Class presentations : (Conversational Skills)

1- : Listening Skills (10 Marks)

The students should be made to understand slowly – delivered spoken material in British English

Class Activities

- Telephonic Conversation: Listening Comprehension Achieving ability to comprehend material delivered at relatively fast speed; comprehending spoken material in British English; intelligent listening in institutions such as an interview in which one is a candidate.
- Lab work

1- : Communication and Presentation Skills (10 Marks)

Class Activities

- Role Play (Minimum ten to be undertaken)
- Striking a Conversation (Minimum ten to be undertaken)
- Extemporaneous Speech (Minimum ten to be undertaken)
- Mock Interview

A Seminar should be undertaken on the above activities

**SYLLABUS
FOR**

B.VOC (Software Development) Third Year (Semester VI)

Session 2023-24, 2024-25

BSDB3201P	PROJECT	400
	TOTAL	400

1. 6-month Industrial Training

Credit: 18

Internal : 150

External Viva : 250

1. Student have to submit any Three certificates from the below activities for 12 Credits of General Studies .Each certificate has 4 credits.

- a) NSS
- b) NCC
- c) Red Cross
- d) Youth Club

Project Marks Distribution

1. The evaluation committee will distribute these marks for seminar/viva/project report and for any other activity, which the committee thinks to be proper.
2. Joint projects will be allowed and joint project reports will also be accepted. Individual project reports will be recognised and the students should highlight their contributions in a joint project report.
3. The Students must prefer doing Industrial Training and try to avoid the training in the computer Institutes where there is no software development work and mere training is given. In case students are not able to find training in any Industry, they may opt for doing this project training in the Department on some live project related to the automation of any University Department functionality or any Project given by the concerned teacher.

Committee for Evaluation of project report/work:

- i. Head of the Department
- ii. Internal Guide (if any)
- iii. One or two nominee(s) of Dean, Academic Affairs
- iv. External Examiner

Quorum will be of any three members.



**OUTLINES OF TESTS,
SYLLABI AND COURSES OF READING**

FOR

B.Voc. (CYBER SECURITY)

**First Year
(FIRST AND SECOND SEMESTER)
Programme Code : BCSB3PUP**

(SESSION 2023-24, 2024-25, 2025-26)



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B. VOC. (CYBER SECURITY) First Year(1st Semester)
Programme Code : BCSB3PUP

(FOR SESSION 2023-24, 2024-25, 2025-26)

Code	Title of Paper	Credits	Hrs	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BCSB1101T	***Punjabi(Compulsory) - I or ***Punjabi Compulsory - I (Mudla Gyan)	4	4	70	30	100	3
BCSB1102T	Fundamentals of Computer and Cyber Security	4	4	70	30	100	3
BCSB1103T	Computer Programming using C	4	4	70	30	100	3
BCSB1104T	Web Designing using HTML and DHTML	4	4	70	30	100	3
BCSB1105P	Project – I	2	4	70	30	100	3
BCSB1106L	Software Lab – I (Based on BCSB1103 & BCSB1104)	2	4	70	30	100	3
Total		20		420	180	600	

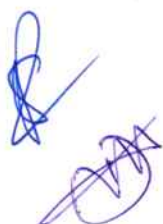

1. The breakup of marks for the practical will be as under:

- | | |
|--|----------|
| i. Internal Assessment | 30 Marks |
| ii. Viva Voce (External Evaluation) | 20 Marks |
| iii. Lab Record Program Development and Execution(External Evaluation) | 50 Marks |

2. The breakup of marks for the internal assessment for theory Subjects will be as under:

- | | |
|---|----------|
| i. Average of Both Mid Semester Tests / Internal Examinations | 20 Marks |
| ii. Attendance | 5 Marks |
| iii. Written Assignment/Project Work etc. | 5 Marks |

*** Only those students who have not studied Punjabi up to matriculation can opt for Punjabi Compulsory (Mudla Gyan). The code for the paper is same.

OUTLINE OF PAPERS AND TESTS
FOR
B. VOC. (CYBER SECURITY) First Year (2nd Semester)
Programme Code : BCSB3PUP

(FOR 2022-23, 2023-24 and 2024-25 Sessions)

Code	Title of Paper	Credits	Hrs	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BCSB1201T	Functional Punjabi / Elementary Punjabi*	4	4	70	30	100	3
BCSB1202T	Fundamentals of DBMS	4	4	70	30	100	3
BCSB1203T	Fundamentals of Cyber Security	4	4	70	30	100	3
BCSB1204T	Programming Using C++	4	4	70	30	100	3
BCSB1205L	Software Lab-II	2	4	70	30	100	3
BCSB1206L	Software Lab – III	2	4	70	30	100	3
BCSB1207T	Drug Abuse : Problem, Management and Prevention**	(only qualifying Paper)	4	70	30	100	3
		20		420	180	600	

1. The breakup of marks for the practical will be as under:
 - i. Internal Assessment 30 Marks
 - ii. Viva Voce (External Evaluation) 20 Marks
 - iii. Lab Record Program Development and Execution(External Evaluation) 50 Marks
 2. The breakup of marks for the internal assessment for theory Subjects will be as under:
 - i. Average of Both Mid Semester Tests / Internal Examinations 20 Marks
 - ii. Attendance 5 Marks
 - iii. Written Assignment/Project Work etc. 5 Marks
- * Only those students who have not studied Punjabi up to matriculation can opt for Elementary Punjabi. The code for the paper is same.
- ** BCSB1208T: Drug Abuse : Problem, Management and Prevention is a compulsory qualifying paper as per university guidelines, the marks for this paper are not counted for the total marks for the degree.

**BCSB1101T : PUNJABI COMPULSORY
AS APPROVED BY DEPARTMENT OF PUNJABI**

OR

To Download the Syllabus, go to:

www.punjabiuniversity.ac.in → Important Links → Download Syllabus →

Academic Session 2023-24 → Faculty of Languages → Punjabi → Under
Graduate Courses



BCSB1101T : PUNJABI COMPULSORY (Mudla Gyan)
AS APPROVED BY DEPARTMENT OF PUNJABI

OR

To Download the Syllabus, go to:

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Academic Session 2023-24 → Faculty of Languages → Punjabi → Under
Graduate Courses



COMMUNICATION SKILLS

Max. Marks : 70 Marks

Min. Pass Marks : 35%

Max. Time : 3hrs

Lectures to be delivered: 55-65

Course Objectives

- To help the learners in developing Communication Skills required for interacting with various internal and external stakeholders of the information technology enterprises
- To help the learners to have sufficient knowledge of required communication skills to deal in information technology affairs and to communicate with organizational staffs in a better way.
- Aim for student's confidence through communication and presentation skills.

Learning Outcome:

- Able to understand the communication process and types of communication.
- Able to write English correctly and master the mechanics of writing the use of correct punctuation marks and capital letter.
- Ability to understand English when it is spoken in various contexts.
- Develop the ability to speak intelligibly using appropriate word stress, sentence stress and elementary intonation patterns.

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.


Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Communication: Meaning, Importance, and Process, Objectives of Communication, Effective Communication, Means/ Media and Types of Communication, Channels of Communication, Barriers to Communication, Voice Training, Importance of Feedback. Interview, Report Writing, Speeches and Presentations, Documentation, Preparation of Extempore speech, Group Discussion, Debates, Declamation; Stage Confidence.

Business Correspondence: Definition, Importance Business letters: Essential features, Parts and Layout, Types: Purchase order letter, Enquiry Letter, Quotation Letter, Acceptance Letter, Refusal Letter, Follow Up Letter and Cancellation of order letter.


6

SECTION B

Personality Development: Types of personality, Dynamics of Personality, Personality Traits, Influences on Personality, Personality Analysis through body language and Individual habits, Physical Aspects of personality, Emotional Stability, Memory Training, Mind and mental development, Mental Blocks, Manners and Art of Living.

Reference Books:

1. Vandan R.Singh "The Written Word " Publisher Oxford University Press (4 July 2006)
2. M.K. Sehgal ,Vandana Khetarpal "Business Communication" Publisher Excel Books (December 1, 2007) ...
3. Duttetal " A Course in Communication Skills " Publisher Company Ltd., 2001.
4. Subhash Jagota "Succeeding through Communication" Publisher: Excel Books (1 December 2007);
5. Prof. Achhru Singh & Dr. Dharminder Singh Ubha "Personality Development and Soft Skills" Publisher



BCSB1102T : FUNDAMENTALS OF COMPUTER AND CYBER SECURITY

Max Marks: 70

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65

Course Objectives

- Aware students about basic of computer and its evolution.
- Provide knowledge of different units of computer like processing unit, IO unit, and storage unit.
- Aware students about online frauds and cyber security.
- Provide knowledge about different types of cyber crimes.

Learning Outcome

On the successful completion of the course, students will be able to;

- Have a clear understanding of fundamentals of computers so as to apply it in real life problems.
- Develop understanding about potential security risks.
- Develop skills to get employment in I.T. field

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to Computer: Block diagram of a Computer, Characteristics of computers and Generations of computers.

Understanding Basics of Cyber Security: Overview of Cyber Security, Internet Governance – Challenges and Constraints, Cyber Threats:- Cyber Warfare-Cyber, Need for a Comprehensive Cyber Security Policy, Need for a Nodal Authority, Need for an International convention on Cyberspace

Viruses: Types of Viruses, Advantages and Disadvantages.

Computer Security: Introduction of Computer Security, History of Computer Security, necessity of Computer Security, components of Computer, Computer Security Threats, Computer Security Controls.

SECTION B

Cyber Crime: Introduction to IT laws & Cyber Crimes – Internet, Hacking, Cracking, Viruses, Virus Attacks, Pornography, Software Piracy, Intellectual property, Legal System of Information Technology, Social Engineering, Mail Bombs, Bug Exploits, and Cyber Security etc. Tracking, IP Tracking, E-Mail Recovery, Encryption and Decryption methods, Search and Seizure of Computers, Recovering deleted evidences, Password Cracking.

Security Policies and Management:- Security Policy and Design, Designing Security Procedures, Security Standards.

Security Models:-Biba Model, Chinese Wall, Bell La Padula Model.

Reference Books:

- 1 P.K. Sinha and P. Sinha, "Foundations of Computing", BPB.
- 2 Sunit Belapure, Nina Godbole "Cyber Security", Willey.
3. Surya Prakash Tripathi , Ritendra Goel , Praveen Kumar Shukla "Introduction to Information Security and Cyber Laws", Kindle Edition.
4. Mayank Bhushan, "Fundamentals of Cyber Security", BPS Publications.



BCSB1103T : COMPUTER PROGRAMMING USING "C"

Max Marks: 70

Min Pass Marks: 35%

Max.Time: 3 Hrs.

Lectures to be delivered: 55-65

Course Objective

- To give fundamental knowledge of Identifiers and Keywords, Constants, Operators.
- To explain the basic concepts of Manipulator Functions.
- To make the learners acquainted with the use of different theories related to Procedural Programming.

Learning Outcome

On the successful completion of the course, students will be able to;

- Have a clear understanding of Object Oriented Programming.
- Develop an in depth knowledge of OOPs techniques.
- Develop skills to get employment in Programming Field.

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Fundamental of C programming: Overview, Basic Structure of C Program, Program Debugging, Compilation and Execution, Rules of Character set, Identifiers and keywords, Constants, Variables, Data types.

Header Files: stdio.h, math.h, string.h, process.h etc.

I/O functions: Formatted and Unformatted console I/O functions.

Operators: Need, Types, Precedence and Associativity. Type conversion (Implicit and Explicit conversion).

Control Structure: Decision making statements (if, if else, switch), Loop control statements (for, while and do-while), jumping statements (break, continue, goto), nested control structures.

Arrays: One dimensional and multi dimensional arrays, Array declaration, initialization, reading values into an array, displaying array contents.

Strings: input/output of strings, string handling functions (strlen, strcpy, strcmp, strcat & strrev).

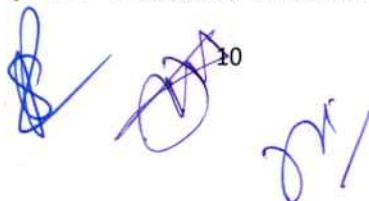
SECTION B

Functions: Uses of functions, various categories of functions, Library functions and user defined functions, prototype, definition and call, formal and actual arguments, local and global variables, methods of parameter passing to functions, recursion.

Storage Classes: automatic, external, static and register variables.

Structures and unions: using structures and unions, comparison of structure with arrays and union.

Pointers: pointer data type, pointer declaration, initialization, accessing values using pointers, pointers and arrays.

Handwritten signatures and a date stamp '10'.

Reference Books:

1. E. Balagurusamy, Programming in C, Tata McGraw-Hill.
2. Let Us C, Yashvant P Kanetkar, BPB.
3. Kernighan and Ritchie, The C Programming Language, PHI.
4. Byron Gottfried, Programming in C, Tata McGraw-Hill.
5. Kamathane, Programming in C, Oxford University Press.



Max Marks: 70

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65

Course Objective

- To give fundamental knowledge Internet Technology and Protocol .
- To explain the basic concepts of Tools and tag used in HTML.
- To make the learners acquainted with the use of different theories related to A.S.P.

Learning Outcome

On the successful completion of the course, students will be able to;

- Have a clear understanding of Internet Technology and Protocol.
- Develop an in depth knowledge of Creating and saving HTML document techniques.
- Develop skills to get employment in ASP,Networking and HTML Field.

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to HTML: Basic HTML concepts, an overview of HTML markup.

Introduction to good Web design, the process of Web publishing, implementation, the phases of Web site development, HTML's role in the Web, and issues facing HTML and the Web. **HTML overview:** the structure of HTML documents; document types, the <HTML> element; the <HEAD> element, the <BODY> element.

Links and Addressing: Linking basics, Types of URLs; linking in HTML, anchor attributes, images and anchors, image maps; semantic linking with the <LINK> element, meta-information.

HTML and Images: The role of images on the Web, image preliminaries; image downloading issues, obtaining images, HTML image basics, images as buttons; and image maps.

Introduction to Layout: Backgrounds, Colors, and Text, Design requirements, HTML approach to Web design, fonts, colors in HTML, document-wide color attributes for <BODY>, and background images. Introduction to lists, tables, frames.

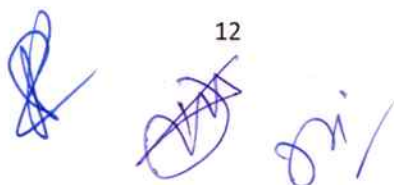
SECTION B

Basic Interactivity and HTML: Forms preliminaries; the <FORM> elements, form controls.

Dynamic HTML (DHTML): Dynamic HTML and document object model, HTML and scripting access, rollover buttons, moving objects with DHTML, and ramifications of DHTML.

Style Sheets: style sheets basics, style sheet example, style sheet properties, positioning with style sheets.

Client Side Scripting: Java script: Introduction, documents, forms, statements, functions, objects, Event and event handling, Browsers and the DOM, J Query: Syntax, Selectors, Events and AJAX methods.



Reference Books:

1. Deitel, Deitel and Nieto: Internet & WWW. How to program, Pearson Education.
2. Thomas A. Powell, HTML: The Complete Reference, Osborne/McGraw-Hill
3. E Stephen Mack, Janan Platt:HTML 4.0 , No Experience Required, BPB Publications.
4. Sybex, "HTML Complete" by BPB Publications, 2001.
5. Bayross, Web Enabled Commercial Applications Development Using HTML, DHTML, Java Script, Perl CGI, BPB Publication
6. Scott Mitchell, Designing Active Server Pages, O Relly, 2000.

Three handwritten signatures in blue ink are located in the center-right area of the page. The first signature is a stylized 'D' with a horizontal line. The second is a circular mark with a diagonal line through it. The third is a cursive 'Ji'.

BCSB1105P : PROJECT– I (ONE MONTH TRAINING BASED ON MS-OFFICE)

Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

Note: Student Have to Submit Project Report on MS- Office

MS-word: Design, create and modify a range of business documents, Displaying Different Views of a Document, Creating and Saving a Document, Selecting, Modifying, Finding and Replace Text, Align Text Using Tabs, Display Text as List Items. Apply Borders and Shading, Preview a document, and adjust its margins and orientation, Insert & Format a Table, Convert Text to a Table, Check Spelling and Grammar, Use the Thesaurus, Print with default or custom settings, Managing Lists – Sort, Renumber, Customize a List, Apply a Page Border and Colour, Sorting Table Data, Control Cell Layout, Perform Calculations in a Table, Creating Customized Formats with Styles and Themes. Create or Modify a Text Style, Create a Custom List or Table Style. Modifying Pictures & Picture Appearance Settings, Wrap Text around a Picture, Insert and Format Screenshots in a Document, Add Word-Art , Use the Mail Merge Feature including Envelopes and Labels.

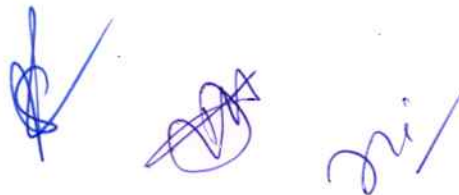
MS-Excel: Construct a spreadsheet and populating Cell Data, Formatting Cells - Search Worksheet Data, Changing Fonts, Modify Rows and Columns, Managing Worksheets and Workbooks, Applying Formulas and Functions, Inserting Currency Symbols, Merging cells, Spell Check a Worksheet, Add Borders and Color to Cells, Printing options to output a chart, Modify the Layout of a Paragraph – Tabs, Headers, Footers, Apply Styles & Manage Formatting, Document Templates, Insert contents, page and section breaks, Apply Character Formatting.

Clip Art , Symbols, Illustrations, Set Page Breaks, Page Layout Options, Manage Workbook Views, Apply Cell and Range Names, Auto Sum in Cells, Calculate Data Across Worksheets, Sort or Filter Worksheet or Table Data, Create, Modify and Format Charts, Create, modify and format spreadsheets using the full range of the software formatting, features including conditional formatting for example Hide /unhide/freeze rows and columns.

MS-PowerPoint: Salient features of Power Point, Starting ,Saving and quitting presentation, various components and elements of PowerPoint Package. Insert Clip Art and Graphs. Adding Multimedia Effects to the slide. Formatting and Editing Presentations. Adding Animation and Transition effects to the presentations.

Reference Books

1. Torben Lage Frandsen "Microsoft Office Word"
2. Stephen, "Word 2010 Introduction" Kalyani Publisher



Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%


This laboratory course will comprise as exercises to supplement what is learnt under paper Based on BCSB1103T and BCSB1104T.

Students are required to develop the following programs with internal documentation:

- 1 **Assignments on Data types, Operators, Control Structure (if else, while, for, Do-while), jumping statements in C.**
 - i. Write a program to print the size of all the data types supported by C.
 - ii. Write a program to check whether the given number is a even number or not.
 - iii. Write a program to accept three numbers and find the largest among them.
 - iv. Write a program to count the different vowels in a line of text using switch.
 - v. Write a program to accept two numbers and perform various arithmetic operations (+, -, *, /) based on the symbol entered.
 - vi. Write a program to find factorial of a number.
 - vii. Write a program to print all prime numbers between any 2 given limits.
 - viii. Write a program to print all the Armstrong numbers between any 2 given limits.
 - ix. Write a program to demonstrate the use of break and continue statements.
- 2 **Assignment on Arrays(one and two dimensional) and strings (string handling functions)**
 - i. Write a program to find largest element in an array.
 - ii. Write a program to search an element in an array.
 - iii. Write a program to find sum and average of numbers stored in an array.
 - iv. Write a program to check whether a string is a Palindrome.
 - v. Write a program to perform matrix addition.
 - vi. Write a program to perform matrix multiplication.
 - vii. Write a program to demonstrate string handling functions.
- 3 **Assignment on Pointers and Array of Pointers**
 - i. Write a function to swap two numbers using pointers.
 - ii. Write a program to access an array of integers using pointers.
- 4 **Assignment on Functions , Recursion and Storage Classes**
 - i. Write a program to demonstrate the methods of argument passing.
 - ii. Write a program to find the roots of a quadratic equation using function.
 - iii. Write a recursive program to find the factorial of a number.
 - iv. Write a recursive program to find the nth Fibonacci number.
 - v. Write a program to show the significance of different storage classes.
- 5 **Assignment on Structures and Unions**
 - i. Write a program to create an employee structure and display the same.
 - ii. Write a program to create a student database storing the roll no, name, class etc and sort by name.

BCSB1201T (A): FUNCTIONAL PUNJABI

AS APPROVED BY DEPARTMENT OF PUNJABI

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BCSB1201T (B): ਪੰਜਾਬੀ ਲਾਜ਼ਮੀ (ਮੁੱਢਲਾ ਗਿਆਨ) ਭਾਗ-ਪਹਿਲਾ

AS APPROVED BY DEPARTMENT OF PUNJABI

Three handwritten signatures in blue ink. The first is a large, stylized 'P' with a long horizontal stroke. The second is a smaller, more compact signature. The third is a signature that appears to be 'Dy'.

BCSB1202T : FUNDAMENTALS OF DBMS

Max Marks: 70

Marks: 35%

Maximum Time: 3 Hrs. Min Pass

Lectures to be delivered: 55-65

Course Objective

- To give fundamental knowledge database and management system.
- To explain the basic concepts of architecture of database.
- To make the learners acquainted with the use of data management issues .

Learning Outcome

On the successful completion of the course, students will be able to;

- Have a clear understanding of dbms and normalization.
- Develop an in depth knowledge of various R.D.B.M.S and SQL Theories.
- Develop skills to get employment in DATABASE Field

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to DBMS: Definition of Database, Components of DBMS Environment, Database Schema and Instance. Three Level architecture of DBMS, Mapping between different levels, Data Independence.

Database languages: DDL, DML, DCL.

Keys : Super, candidate, primary, unique, foreign, composite, alternate

E-R model: Definition, Entity and Relationship, cardinality of a relationship, E-R Diagram Notations, Modeling using E-R Diagrams, Aggregation, Generalization, Specialization, Transforming E-R Model into Physical database Design, merits and demerits of E-R Modeling.

Record Based Logical Models: Hierarchical Model - Operations, Implementation, Advantages and Disadvantages. Network Model - Operations, Implementation, Advantages and Disadvantages, Relational Model - Operations, Implementation, Advantages and Disadvantages. Comparison between Hierarchical, Network and Relational Model

SECTION B

Normalization: Definition, Need, Process: Determinant, Functional Dependency, Full Functional Dependency, Partial Dependency, Transitive dependency, Multi-valued Dependency, Join Dependency, Types of Normal Forms, Merits and Demerits of Normalization.

Transaction & Concurrency Control: Concept of transaction, ACID properties, Serializability, States of transaction, Concurrency Control – Locking techniques, time-stamp based protocols.

Database Security: Security requirements, database integrity, Granting & revoking privileges.

Reference Books:

1. JD Ullman, Garcia Molina, Database System: The Complete Book, Pearson Education.
2. Ramez Elmasri, Fundamentals of Database Systems, Pearson Education.
3. C.J Date, An Introduction to Database System, Pearson Education.
4. Parteek Bhatia, Database Management System. Kalyani Publications.
5. Henry F. Korth, Database System Concepts, Tata McGraw-Hill.



BCSB1203T :FUNDAMENTALS OF CYBER SECURITY

Max Marks: 70

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65

Course Objective

1. To prepare students with the technical knowledge and skills needed to protect and defend computer systems and networks.
2. To develop graduates that can plan, implement, and monitor cyber security mechanisms to help ensure the protection of information technology assets.
3. To develop graduates that can identify, analyze, and remediate computer security breaches.

Learning Outcome:

Upon completion of the degree program, students will be able to:

1. Analyze and evaluate the cyber security needs of an organization.
2. Conduct a cyber security risk assessment.
3. Measure the performance and troubleshoot cyber security systems.
4. Implement cyber security solutions.

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

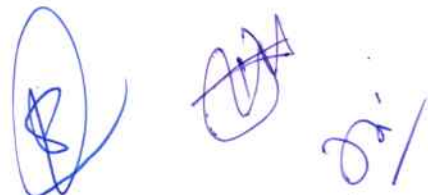
SECTION A

Cyber Security Vulnerabilities and Cyber Security Safeguards : Overview of Cyber Security, Cyber Security Vulnerabilities-Overview, vulnerabilities in software, System administration, Complex Network Architectures, Open Access to Organizational Data, Weak Authentication, Unprotected Broadband communications, Poor Cyber Security Awareness. Cyber Security Safeguards- Overview, Access control, Audit, Authentication, Biometrics, Cryptography, Deception, Denial of Service Filters, Ethical Hacking, Firewalls, Intrusion Detection Systems, Response, Scanning, Security policy, Threat Management.

Securing Web Application, Services and Servers:-Introduction, Basic security for HTTP Applications and Services, Basic Security for SOAP Services, Identity Management and Web Services, Authorization Patterns, Security Considerations, Challenges.

Intrusion Detection and Prevention: Intrusion, Physical Theft, Abuse of Privileges, Unauthorized Access by Outsider, Malware infection, Intrusion detection and Prevention Techniques, Anti-Malware software, Network based Intrusion detection Systems, Network based Intrusion Prevention Systems, Host based Intrusion prevention Systems, Security Information Management, Network Session Analysis, System Integrity Validation.

SECTION B



Cryptography and Network Security: Introduction to Cryptography, Symmetric key Cryptography, Asymmetric key Cryptography, Message Authentication, Digital Signatures, Applications of Cryptography. Overview of Firewalls- Types of Firewalls, User Management, VPN Security Security Protocols: - security at the Application Layer- PGP and S/MIME, Security at Transport Layer- SSL and TLS, Security at Network Layer-IPSec.

Cyberspace and the Law : Introduction, Cyber Security Regulations, Roles of International Law, the state and Private Sector in Cyberspace, Cyber Security Standards. The INDIAN Cyberspace, National Cyber Security Policy 2013

Cyber Forensics : Introduction to Cyber Forensics, Handling Preliminary Investigations, Controlling an Investigation, Conducting disk-based analysis, Investigating Information-hiding, Scrutinizing E-mail, Validating E-mail header information, Tracing Internet access, Tracing memory in real-time.

Reference Books:

1. Mark Minasi and John Paul Mueller Mastering, Window Server 2008
2. Danielle Ruest, Microsoft Windows Server 2008 "The Complete Reference", hyperlink "[http://www.google.co.in/search?tbo=p&tbm=bks&q=inauthor:%22Nelson +Ruest%22](http://www.google.co.in/search?tbo=p&tbm=bks&q=inauthor:%22Nelson+Ruest%22)"
3. MTA Windows of Fundamentals (Microsoft Official Academic Course) [Paperback] Microsoft Official Academic Course.
4. Windows 2010 Configuration : Microsoft Certified Technology Specialist Exam 70-680 [With Access Code] (Microsoft Official Academic Course) [Paperback] Craig Zacker (Author)
5. Window Server Administration fundamentals : Microsoft Official Academic Course



Max Marks: 70

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65

Course Objective

- To familiarize with Object Oriented concepts
- To develop the skills of programming in C++
- To understand the difference between object oriented and procedure oriented programming.

Learning Outcome

- An understanding of the principles behind the object oriented development process.
- Competence in the use of object oriented programming language in the development of small to medium sized application programs

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction: Basics of Object Oriented Programming (OOP), Difference between C & C++, Manipulators, Storage classes.

Classes and Objects: Class Declaration and Class Definition, Defining member functions, inline functions, Nesting of member functions, Members access control. this pointer. Objects: Object as function arguments, array of objects, functions returning objects, Const member.

Static data members and Static member functions, Friend functions and Friend classes **Constructors:** properties, types of constructors, Dynamic constructors, Constructor overloading.

Destructors: Properties, Virtual destructors. Destroying objects. Rules for constructors and destructors.

Array of objects. Dynamic memory allocation using new and delete operators, Nested and container classes, Scopes: Local, Global, Namespace and Class.

Inheritance: Defining derived classes, Types of inheritance, types of derivation- public, private, protected, function redefining, constructors in derived class, Types of base classes – abstract and virtual.

SECTION B

Operator overloading: rules for operator overloading overloading binary operator, overloading unary operators, Function overloading.

Polymorphism : virtual functions, late binding, pure virtual functions and abstract base class Difference between function overloading, redefining, and overriding.

Templates: Generic Functions and Generic Classes, Overloading of template functions. **Exception Handling :** catching class types, handling derived class exceptions, catching exceptions, restricting exception, rethrowing exceptions, terminate and unexpected, uncaught exceptions.

Reference Books:

1. E. Balaguruswamy, Object Oriented Programming with C++, Tata McGraw-Hill.
2. Deitel & Deitel, "C++ How to Program", Pearson Education.
3. Herbert Schildt, The Complete Reference C++, Tata McGraw-Hill, 2001.
4. Robert Lafore, Object Oriented Programming in C++, Galgotia Publications,
5. Bjarne Stråtrup, "The C++ Programming Language", Addition- Wesley Publication.
6. E. Balagurusamy, Object Oriented Programming with C++, Tata McGraw-Hill.
7. Anshuman Sharma, Learn Programming in C++, Lakhanpal Publishers.

Three handwritten signatures in blue ink are present. The first is a large, stylized circular signature on the left. The second is a smaller, more compact signature in the center. The third is a signature on the right that includes a small triangle or 'A' shape.

BCSB1205L : SOFTWARE LAB – II (Based on BCSB1203T)

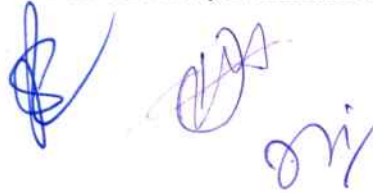
Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BCSB1203T : Fundamentals of Cyber Security

1. Maximum Marks for Continuous Assessment: 30
2. Maximum Marks for University Examination: 70

Three handwritten signatures in blue ink, likely representing the course coordinator and assessors.

Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BCSB1204T Students are required to develop the following programs with internal documentation:

1. Write a program to find area of rectangle using the concept of classes & object.
2. Write a program to implement the concept of array of object.
3. Write a program to show the use of friend function.
4. Write a program to show the use of constructor overloading.
5. Write a program to show the use of copy constructor.
6. Write a program to show the use of destructors.
7. Write a program to show the use of virtual function.
8. Write a program to implement the concept of multilevel inheritance.
9. Write a program to implement the concept of multiple inheritance.
10. Write a program of unary operator overloading.
11. Write a program of Binary operator overloading.
12. Write a program to swap two values independent of type of the variable using function template.
13. Write a program to illustrate how an exception is handled using try catch block using throw statements.
14. Write a program to demonstrate how to insert and extract an object to and from data files.
15. Write a program to count the total number of account objects in a file and then display information of a particular account object.

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BCSB1207T: Drug Abuse : Problem, Management and Prevention **

To Download the Syllabus, go to:

www.punjabiuniversity.ac.in → Important Links → Download Syllabus → Academic Session

2022-23 → Common for All



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93/C

**OUTLINES OF TESTS,
SYLLABI AND COURSES OF READING**

FOR

B.Voc. (CYBER SECURITY)

**First Year
(FIRST AND SECOND SEMESTER)
Programme Code: BCSB3PUP**

(SESSION 2023-24, 2024-25, 2025-26)



**PUNJABI UNIVERSITY
PATIALA**

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B. VOC. (CYBER SECURITY) First Year (1st Semester)
Programme Code: BCSB3PUP

(FOR SESSION 2023-24, 2024-25, 2025-26)

Code	Title of Paper	Credits	Hrs	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BCSB1101T	***Punjabi(Compulsory) - I or ***Punjabi Compulsory - I (Mudla Gyan)	4	4	70	30	100	3
BCSB1102T	Communication Skills	4	4	70	30	100	3
BCSB1103T	Fundamentals of Computer and Cyber Security	4	4	70	30	100	3
BCSB1104T	Computer Programming using C	4	4	70	30	100	3
BCSB1105T	Web Designing using HTML and DHTML	4	4	70	30	100	3
BCSB1106P	Project – I	2	4	70	30	100	3
BCSB1107L	Software Lab – I (Based on BCSB1104T & BCSB1105T)	2	4	70	30	100	3
Total		24		490	210	700	

1. The breakup of marks for the practical will be as under:
 - i. Internal Assessment 30 Marks
 - ii. Viva Voce (External Evaluation) 20 Marks
 - iii. Lab Record Program Development and Execution(External Evaluation) 50 Marks
2. The breakup of marks for the internal assessment for theory Subjects will be as under:
 - i. Average of Both Mid Semester Tests / Internal Examinations 20 Marks
 - ii. Attendance 5 Marks
 - iii. Written Assignment/Project Work etc. 5 Marks

*** Only those students who have not studied Punjabi up to matriculation can opt for Punjab Compulsory (Mudla Gyan). The code for the paper is same.

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OUTLINE OF PAPERS AND TESTS
FOR
B. VOC. (CYBER SECURITY) First Year (2nd Semester)
Programme Code : BCSB3PUP

(FOR 2022-23, 2023-24 and 2024-25 Sessions)

Code	Title of Paper	Credits	Hrs	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BCSB1201T	Functional Punjabi / Elementary Punjabi*	4	4	70	30	100	3
BCSB1202T	Fundamentals of DBMS	4	4	70	30	100	3
BCSB1203T	Fundamentals of Cyber Security	4	4	70	30	100	3
BCSB1204T	Programming Using C++	4	4	70	30	100	3
BCSB1205L	Software Lab-II	2	4	70	30	100	3
BCSB1206L	Software Lab – III	2	4	70	30	100	3
BCSB1207T	Drug Abuse : Problem, Management and Prevention**	(only qualifying Paper)	4	70	30	100	3
		20		420	180	600	

1. The breakup of marks for the practical will be as under:
 - i. Internal Assessment 30 Marks
 - ii. Viva Voce (External Evaluation) 20 Marks
 - iii. Lab Record Program Development and Execution(External Evaluation) 50 Marks
2. The breakup of marks for the internal assessment for theory Subjects will be as under:
 - i. Average of Both Mid Semester Tests / Internal Examinations 20 Marks
 - ii. Attendance 5 Marks
 - iii. Written Assignment/Project Work etc. 5 Marks

* Only those students who have not studied Punjabi up to matriculation can opt for Elementary Punjabi. The code for the paper is same.

** BCSB1208T: Drug Abuse : Problem, Management and Prevention is a compulsory qualifying paper as per university guidelines, the marks for this paper are not counted for the total marks for the degree.

30/1

**BCSB1101T : PUNJABI COMPULSORY
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OR

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Graduate Courses



BCSB1101T : PUNJABI COMPULSORY (Mudla Gyan)
AS APPROVED BY DEPARTMENT OF PUNJABI

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Academic Session 2023-24 → Faculty of Languages → Punjabi → Under
Graduate Courses

28/c

BCSB1102T: COMMUNICATION SKILLS

Max. Marks : 70 Marks

Min. Pass Marks : 35%

Max. Time : 3hrs

Lectures to be delivered: 55-65

Course Objectives

- To help the learners in developing Communication Skills required for interacting with various internal and external stakeholders of the information technology enterprises
- To help the learners to have sufficient knowledge of required communication skills to deal in information technology affairs and to communicate with organizational staffs in a better way.
- Aim for student's confidence through communication and presentation skills.

Learning Outcome:

- Able to understand the communication process and types of communication.
- Able to write English correctly and master the mechanics of writing the use of correct punctuation marks and capital letter.
- Ability to understand English when it is spoken in various contexts.
- Develop the ability to speak intelligibly using appropriate word stress, sentence stress and elementary intonation patterns.

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Communication: Meaning, Importance, and Process, Objectives of Communication, Effective Communication, Means/ Media and Types of Communication, Channels of Communication, Barriers to Communication, Voice Training, Importance of Feedback. Interview, Report Writing, Speeches and Presentations, Documentation, Preparation of Extempore speech, Group Discussion, Debates, Declamation; Stage Confidence.

Business Correspondence: Definition, Importance Business letters: Essential features, Parts and Layout, Types: Purchase order letter, Enquiry Letter, Quotation Letter, Acceptance Letter, Refusal Letter, Follow Up Letter and Cancellation of order letter.



SECTION B

Personality Development: Types of personality, Dynamics of Personality, Personality Traits, Influences on Personality, Personality Analysis through body language and Individual habits, Physical Aspects of personality, Emotional Stability, Memory Training, Mind and mental development, Mental Blocks, Manners and Art of Living.

Reference Books:

1. Vandan R.Singh "The Written Word " Publisher Oxford University Press (4 July 2006)
2. M.K. Sehgal ,Vandana Khetarpal "Business Communication" Publisher Excel Books (December 1, 2007) ...
3. Duttetal " A Course in Communication Skills " Publisher Company Ltd., 2001.
4. Subhash Jagota "Succeeding through Communication" Publisher: Excel Books (1 December 2007);
5. Prof. Achhru Singh & Dr. Dharminder Singh Ubha "Personality Development and Soft Skills" Publisher



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BCSB1103T: FUNDAMENTALS OF COMPUTER AND CYBER SECURITY

Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

Lectures to be delivered: 55-65

Course Objectives

- Aware students about basic of computer and its evolution.
- Provide knowledge of different units of computer like processing unit, IO unit, and storage unit.
- Aware students about online frauds and cyber security.
- Provide knowledge about different types of cyber crimes.

Learning Outcome

On the successful completion of the course, students will be able to;

- Have a clear understanding of fundamentals of computers so as to apply it in real life problems.
- Develop understanding about potential security risks.
- Develop skills to get employment in I.T. field

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to Computer: Block diagram of a Computer, Characteristics of computers and Generations of computers.

Understanding Basics of Cyber Security: Overview of Cyber Security, Internet Governance – Challenges and Constraints, Cyber Threats:- Cyber Warfare-Cyber, Need for a Comprehensive Cyber Security Policy, Need for a Nodal Authority, Need for an International convention on Cyberspace

Viruses: Types of Viruses, Advantages and Disadvantages.

Computer Security: Introduction of Computer Security, History of Computer Security, necessity of Computer Security, components of Computer, Computer Security Threats, Computer Security Controls.

SECTION B

Cyber Crime: Introduction to IT laws & Cyber Crimes – Internet, Hacking, Cracking, Viruses, Virus Attacks, Pornography, Software Piracy, Intellectual property, Legal System of Information Technology, Social Engineering, Mail Bombs, Bug Exploits, and Cyber Security etc. Tracking, IP Tracking, E-Mail Recovery, Encryption and Decryption methods, Search and Seizure of Computers, Recovering deleted evidences, Password Cracking.

Security Policies and Management:- Security Policy and Design, Designing Security Procedures, Security Standards.

Security Models:-Biba Model, Chinese Wall, Bell La Padula Model.

Reference Books:

- 1 P.K. Sinha and P. Sinha, "Foundations of Computing", BPB.
- 2 Sunit Belapure, Nina Godbole "Cyber Security", Willey.
3. Surya Prakash Tripathi , Ritendra Goel , Praveen Kumar Shukla "Introduction to Information Security and Cyber Laws", Kindle Edition.
4. Mayank Bhushan, "Fundamentals of Cyber Security", BPS Publications.

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BCSB1104T : COMPUTER PROGRAMMING USING "C"

Max Marks: 70

Min Pass Marks: 35%

Max.Time: 3 Hrs.

Lectures to be delivered: 55-65

Course Objective

- To give fundamental knowledge of Identifiers and Keywords, Constants, Operators.
- To explain the basic concepts of Manipulator Functions.
- To make the learners acquainted with the use of different theories related to Procedural Programming.

Learning Outcome

On the successful completion of the course, students will be able to;

- Have a clear understanding of Object Oriented Programming.
- Develop an in depth knowledge of OOPs techniques.
- Develop skills to get employment in Programming Field.

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Fundamental of C programming: Overview, Basic Structure of C Program, Program Debugging, Compilation and Execution, Rules of Character set, Identifiers and keywords, Constants, Variables, Data types.

Header Files: stdio.h, math.h, string.h, process.h etc.

I/O functions: Formatted and Unformatted console I/O functions.

Operators: Need, Types, Precedence and Associativity. Type conversion (Implicit and Explicit conversion).

Control Structure: Decision making statements (if, if else, switch), Loop control statements (for, while and do-while), jumping statements (break, continue, goto), nested control structures.

Arrays: One dimensional and multi dimensional arrays, Array declaration, initialization, reading values into an array, displaying array contents.

Strings: input/output of strings, string handling functions (strlen, strcpy, strcmp, strcat & strrev).

SECTION B

Functions: Uses of functions, various categories of functions, Library functions and user defined functions, prototype, definition and call, formal and actual arguments, local and global variables, methods of parameter passing to functions, recursion.

Storage Classes: automatic, external, static and register variables.

Structures and unions: using structures and unions, comparison of structure with arrays and union.

Pointers: pointer data type, pointer declaration, initialization, accessing values using pointers, pointers and arrays.

Reference Books:

1. E. Balagurusamy, Programming in C, Tata McGraw-Hill.
2. Let Us C, Yashvant P Kanetkar, BPB.
3. Kernighan and Ritchie, The C Programming Language, PHI.
4. Byron Gottfried, Programming in C, Tata McGraw-Hill.
5. Kamathane, Programming in C, Oxford University Press.



Max Marks: 70

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65

Course Objective

- To give fundamental knowledge Internet Technology and Protocol .
- To explain the basic concepts of Tools and tag used in HTML.
- To make the learners acquainted with the use of different theories related to A.S.P.

Learning Outcome

On the successful completion of the course, students will be able to;

- Have a clear understanding of Internet Technology and Protocol.
- Develop an in depth knowledge of Creating and saving HTML document techniques.
- Develop skills to get employment in ASP,Networking and HTML Field.

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to HTML: Basic HTML concepts, an overview of HTML markup.

Introduction to good Web design, the process of Web publishing, implementation, the phases of Web site development, HTML's role in the Web, and issues facing HTML and the Web. **HTML overview:** the structure of HTML documents; document types, the <HTML> element; the <HEAD> element, the <BODY> element.

Links and Addressing: Linking basics, Types of URLs; linking in HTML, anchor attributes, images and anchors, image maps; semantic linking with the <LINK> element, meta-information.

HTML and Images: The role of images on the Web, image preliminaries; image downloading issues, obtaining images, HTML image basics, images as buttons; and image maps.

Introduction to Layout: Backgrounds, Colors, and Text; Design requirements, HTML approach to Web design, fonts, colors in HTML, document-wide color attributes for <BODY>, and background images. Introduction to lists, tables, frames.

SECTION B

Basic Interactivity and HTML: Forms preliminaries; the <FORM> elements, form controls.

Dynamic HTML (DHTML): Dynamic HTML and document object model, HTML and scripting access, rollover buttons, moving objects with DHTML, and ramifications of DHTML.

Style Sheets: style sheets basics, style sheet example, style sheet properties, positioning with style sheets.

Client Side Scripting: Java script: Introduction, documents, forms, statements, functions, objects, Event and event handling, Browsers and the DOM, J Query: Syntax, Selectors, Events and AJAX methods.

Reference Books:

1. Deitel, Deitel and Nieto: Internet & WWW. How to program, Pearson Education.
2. Thomas A. Powell, HTML: The Complete Reference, Osborne/McGraw-Hill
3. E Stephen Mack, Janan Platt: HTML 4.0 , No Experience Required, BPB Publications.
4. Sybex, "HTML Complete" by BPB Publications, 2001.
5. Bayross, Web Enabled Commercial Applications Development Using HTML, DHTML, Java Script, Perl CGI, BPB Publication
6. Scott Mitchell, Designing Active Server Pages, O'Reilly, 2000.

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BCSB1106P: PROJECT- I (ONE MONTH TRAINING BASED ON MS-OFFICE)

Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

Note: Student Have to Submit Project Report on MS- Office

MS-word: Design, create and modify a range of business documents, Displaying Different Views of a Document, Creating and Saving a Document, Selecting, Modifying, Finding and Replace Text, Align Text Using Tabs, Display Text as List Items. Apply Borders and Shading, Preview a document, and adjust its margins and orientation, Insert & Format a Table, Convert Text to a Table, Check Spelling and Grammar, Use the Thesaurus, Print with default or custom settings, Managing Lists – Sort, Renumber, Customize a List, Apply a Page Border and Colour, Sorting Table Data, Control Cell Layout, Perform Calculations in a Table, Creating Customized Formats with Styles and Themes. Create or Modify a Text Style, Create a Custom List or Table Style. Modifying Pictures & Picture Appearance Settings, Wrap Text around a Picture, Insert and Format Screenshots in a Document, Add Word-Art , Use the Mail Merge Feature including Envelopes and Labels.

MS-Excel: Construct a spreadsheet and populating Cell Data, Formatting Cells - Search Worksheet Data, Changing Fonts, Modify Rows and Columns, Managing Worksheets and Workbooks, Applying Formulas and Functions, Inserting Currency Symbols, Merging cells, Spell Check a Worksheet, Add Borders and Color to Cells, Printing options to output a chart, Modify the Layout of a Paragraph – Tabs, Headers, Footers, Apply Styles & Manage Formatting, Document Templates, Insert contents, page and section breaks, Apply Character Formatting.

Clip Art , Symbols, Illustrations, Set Page Breaks, Page Layout Options, Manage Workbook Views, Apply Cell and Range Names, Auto Sum in Cells, Calculate Data Across Worksheets, Sort or Filter Worksheet or Table Data, Create, Modify and Format Charts, Create, modify and format spreadsheets using the full range of the software formatting, features including conditional formatting for example Hide /unhide/freeze rows and columns.

MS-PowerPoint: Salient features of Power Point, Starting ,Saving and quitting presentation, various components and elements of PowerPoint Package. Insert Clip Art and Graphs. Adding Multimedia Effects to the slide. Formatting and Editing Presentations. Adding Animation and Transition effects to the presentations.

Reference Books

1. Torben Lage Frandsen "Microsoft Office Word"
2. Stephen, "Word 2010 Introduction" Kalyani Publisher



BCSB1107L: SOFTWARE LAB – I (Based on BCSB1104T and BCSB1105T)

Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper Based on BCSB1103T and BCSB1104T.

Students are required to develop the following programs with internal documentation:

- 1 **Assignments on Data types, Operators, Control Structure (if else, while, for, Do-while), jumping statements in C.**
 - i. Write a program to print the size of all the data types supported by C.
 - ii. Write a program to check whether the given number is a even number or not.
 - iii. Write a program to accept three numbers and find the largest among them.
 - iv. Write a program to count the different vowels in a line of text using switch.
 - v. Write a program to accept two numbers and perform various arithmetic operations (+, -, *, /) based on the symbol entered.
 - vi. Write a program to find factorial of a number.
 - vii. Write a program to print all prime numbers between any 2 given limits.
 - viii. Write a program to print all the Armstrong numbers between any 2 given limits.
 - ix. Write a program to demonstrate the use of break and continue statements.
- 2 **Assignment on Arrays(one and two dimensional) and strings (string handling functions)**
 - i. Write a program to find largest element in an array.
 - ii. Write a program to search an element in an array.
 - iii. Write a program to find sum and average of numbers stored in an array.
 - iv. Write a program to check whether a string is a Palindrome.
 - v. Write a program to perform matrix addition.
 - vi. Write a program to perform matrix multiplication.
 - vii. Write a program to demonstrate string handling functions.
- 3 **Assignment on Pointers and Array of Pointers**
 - i. Write a function to swap two numbers using pointers.
 - ii. Write a program to access an array of integers using pointers.
- 4 **Assignment on Functions , Recursion and Storage Classes**
 - i. Write a program to demonstrate the methods of argument passing.
 - ii. Write a program to find the roots of a quadratic equation using function.
 - iii. Write a recursive program to find the factorial of a number.
 - iv. Write a recursive program to find the nth Fibonacci number.
 - v. Write a program to show the significance of different storage classes.
- 5 **Assignment on Structures and Unions**
 - i. Write a program to create an employee structure and display the same.
 - ii. Write a program to create a student database storing the roll no, name, class etc and sort by name.

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BCSB1201T (A): FUNCTIONAL PUNJABI

AS APPROVED BY DEPARTMENT OF PUNJABI

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BCSB1201T (B): ਪੰਜਾਬੀ ਲਾਜ਼ਮੀ (ਮੁੱਢਲਾ ਗਿਆਨ) ਭਾਗ-ਪਹਿਲਾ

AS APPROVED BY DEPARTMENT OF PUNJABI

22/11/2020

BCSB1202T: FUNDAMENTALS OF DBMS

Max Marks: 70

Marks: 35%

Course Objective

- To give fundamental knowledge database and management system.
- To explain the basic concepts of architecture of database.
- To make the learners acquainted with the use of data management issues .

Learning Outcome

On the successful completion of the course, students will be able to;

- Have a clear understanding of dbms and normalization.
- Develop an in depth knowledge of various R.D.B.M.S and SQL Theories.
- Develop skills to get employment in DATABASE Field

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction to DBMS: Definition of Database, Components of DBMS Environment, Database Schema and Instance. Three Level architecture of DBMS, Mapping between different levels, Data Independence.

Database languages: DDL, DML, DCL.

Keys : Super, candidate, primary, unique, foreign, composite, alternate

E-R model: Definition, Entity and Relationship, cardinality of a relationship, E-R Diagram Notations, Modeling using E-R Diagrams, Aggregation, Generalization, Specialization, Transforming E-R Model into Physical database Design, merits and demerits of E-R Modeling.

Record Based Logical Models: Hierarchical Model - Operations, Implementation, Advantages and Disadvantages. Network Model - Operations, Implementation, Advantages and Disadvantages, Relational Model - Operations, Implementation, Advantages and Disadvantages. Comparison between Hierarchical, Network and Relational Model

SECTION B

Normalization: Definition, Need, Process: Determinant, Functional Dependency, Full Functional Dependency, Partial Dependency, Transitive dependency, Multi-valued Dependency, Join Dependency, Types of Normal Forms, Merits and Demerits of Normalization.

Transaction & Concurrency Control: Concept of transaction, ACID properties, Serializability, States of transaction, Concurrency Control – Locking techniques, time-stamp based protocols.

Database Security: Security requirements, database integrity, Granting & revoking privileges.

Reference Books:

1. JD Ullman, Garcia Molina, Database System: The Complete Book, Pearson Education.
2. Ramez Elmasri, Fundamentals of Database Systems, Pearson Education.
3. C.J Date, An Introduction to Database System, Pearson Education.
4. Parteek Bhatia, Database Management System. Kalyani Publications.
5. Henry F. Korth, Database System Concepts, Tata McGraw-Hill.

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BCSB1203T: FUNDAMENTALS OF CYBER SECURITY

Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

Lectures to be delivered: 55-65

Course Objective

1. To prepare students with the technical knowledge and skills needed to protect and defend computer systems and networks.
2. To develop graduates that can plan, implement, and monitor cyber security mechanisms to help ensure the protection of information technology assets.
3. To develop graduates that can identify, analyze, and remediate computer security breaches.

Learning Outcome:

Upon completion of the degree program, students will be able to:

1. Analyze and evaluate the cyber security needs of an organization.
2. Conduct a cyber security risk assessment.
3. Measure the performance and troubleshoot cyber security systems.
4. Implement cyber security solutions.

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Cyber Security Vulnerabilities and Cyber Security Safeguards : Overview of Cyber Security, Cyber Security Vulnerabilities-Overview, vulnerabilities in software, System administration, Complex Network Architectures, Open Access to Organizational Data, Weak Authentication, Unprotected Broadband communications, Poor Cyber Security Awareness. Cyber Security Safeguards- Overview, Access control, Audit, Authentication, Biometrics, Cryptography, Deception, Denial of Service Filters, Ethical Hacking, Firewalls, Intrusion. Detection Systems, Response, Scanning, Security policy, Threat Management.

Securing Web Application, Services and Servers:-Introduction, Basic security for HTTP Applications and Services, Basic Security for SOAP Services, Identity Management and Web Services, Authorization Patterns, Security Considerations, Challenges.

Intrusion Detection and Prevention: Intrusion, Physical Theft, Abuse of Privileges, Unauthorized Access by Outsider, Malware infection, Intrusion detection and Prevention Techniques, Anti-Malware software, Network based Intrusion detection Systems, Network based Intrusion Prevention Systems, Host based Intrusion prevention Systems, Security Information Management, Network Session Analysis, System Integrity Validation.

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SECTION B

Cryptography and Network Security: Introduction to Cryptography, Symmetric key Cryptography, Asymmetric key Cryptography, Message Authentication, Digital Signatures, Applications of Cryptography. Overview of Firewalls- Types of Firewalls, User Management, VPN Security Security Protocols: - security at the Application Layer- PGP and S/MIME, Security at Transport Layer- SSL and TLS, Security at Network Layer-IPSec.

Cyberspace and the Law : Introduction, Cyber Security Regulations, Roles of International Law, the state and Private Sector in Cyberspace, Cyber Security Standards. The INDIAN Cyberspace, National Cyber Security Policy 2013

Cyber Forensics : Introduction to Cyber Forensics, Handling Preliminary Investigations, Controlling an Investigation, Conducting disk-based analysis, Investigating Information-hiding, Scrutinizing E-mail, Validating E-mail header information, Tracing Internet access, Tracing memory in real-time.

Reference Books:

1. Mark Minasi and John Paul Mueller Mastering, Window Server 2008
2. Danielle Ruest, Microsoft Windows Server 2008 "The Complete Reference", hyperlink "<http://www.google.co.in/search?tbo=p&tbm=bks&q=inauthor:%22Nelson+Ruest%22>"
3. MTA Windows of Fundamentals (Microsoft Official Academic Course) [Paperback] Microsoft Official Academic Course.
4. Windows 2010 Configuration : Microsoft Certified Technology Specialist Exam 70-680 [With Access Code] (Microsoft Official Academic Course) [Paperback] Craig Zacker (Author)
5. Window Server Administration fundamentals : Microsoft Official Academic Course

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Max Marks: 70

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65

Course Objective

- To familiarize with Object Oriented concepts
- To develop the skills of programming in C++
- To understand the difference between object oriented and procedure oriented programming.

Learning Outcome

- An understanding of the principles behind the object oriented development process.
- Competence in the use of object oriented programming language in the development of small to medium sized application programs

Instructions for the paper setter

The question paper will consist of three sections, Sections A, B & C. Sections A & B will have four questions each from the respective sections of the syllabus. Each question will carry 12 marks, which may be segregated into sub-parts. Section C will be compulsory with 11 short answer type questions of 02 marks each, which will cover the entire syllabus.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Introduction: Basics of Object Oriented Programming (OOP), Difference between C & C++, Manipulators, Storage classes.

Classes and Objects: Class Declaration and Class Definition, Defining member functions, inline functions, Nesting of member functions, Members access control. this pointer. Objects: Object as function arguments, array of objects, functions returning objects, Const member.

Static data members and Static member functions, Friend functions and Friend classes **Constructors:** properties, types of constructors, Dynamic constructors, Constructor overloading.

Destructors: Properties, Virtual destructors. Destroying objects. Rules for constructors and destructors.

Array of objects. Dynamic memory allocation using new and delete operators, Nested and container classes, Scopes: Local, Global, Namespace and Class.

Inheritance: Defining derived classes, Types of inheritance, types of derivation- public, private, protected, function redefining, constructors in derived class, Types of base classes – abstract and virtual.

SECTION B

Operator overloading: rules for operator overloading overloading binary operator, overloading unary operators, Function overloading.

Polymorphism : virtual functions, late binding, pure virtual functions and abstract base class

Difference between function overloading, redefining, and overriding.

Templates: Generic Functions and Generic Classes, Overloading of template functions. **Exception**

Handling : catching class types, handling derived class exceptions, catching exceptions, restricting exception, rethrowing exceptions, terminate and unexpected, uncaught exceptions.

Reference Books:

1. E. Balaguruswamy, Object Oriented Programming with C++, Tata McGraw-Hill.
2. Deitel & Deitel, "C++ How to Program", Pearson Education.
3. Herbert Schildt, The Complete Reference C++, Tata McGraw-Hill, 2001.
4. Robert Lafore, Object Oriented Programming in C++, Galgotia Publications,
5. Bjarne Strastrup, "The C++ Programming Language", Addison- Wesley Publication.
6. E. Balagurusamy, Object Oriented Programming with C++, Tata McGraw-Hill.
7. Anshuman Sharma, Learn Programming in C++, Lakhanpal Publishers.

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BCSB1205L : SOFTWARE LAB – II (Based on BCSB1203T)

Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BCSB1203T : Fundamentals of Cyber Security

1. Maximum Marks for Continuous Assessment: 30
2. Maximum Marks for University Examination: 70

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BCSB1206L: SOFTWARE LAB – III (Based on BCSB1204T)

Max Marks: 70

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper BCSB1204T Students are required to develop the following programs with internal documentation:

1. Write a program to find area of rectangle using the concept of classes & object.
2. Write a program to implement the concept of array of object.
3. Write a program to show the use of friend function.
4. Write a program to show the use of constructor overloading.
5. Write a program to show the use of copy constructor.
6. Write a program to show the use of destructors.
7. Write a program to show the use of virtual function.
8. Write a program to implement the concept of multilevel inheritance.
9. Write a program to implement the concept of multiple inheritance.
10. Write a program of unary operator overloading.
11. Write a program of Binary operator overloading.
12. Write a program to swap two values independent of type of the variable using function template.
13. Write a program to illustrate how an exception is handled using try catch block using throw statements.
14. Write a program to demonstrate how to insert and extract an object to and from data files.
15. Write a program to count the total number of account objects in a file and then display information of a particular account object.

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BCSB1207T: Drug Abuse: Problem, Management and Prevention **

To Download the Syllabus, go to:

www.punjabiversity.ac.in → Important Links → Download Syllabus → Academic Session

2023-24 → Common for All

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**OUTLINES OF TESTS,
SYLLABI AND COURSES OF READING**

FOR

B.Voc. (CYBER SECURITY)

**Third Year
(FIFTH AND SIXTH SEMESTER)
FOR**

Session 2023-24, 2024-25

Programme Code: BCSB3PUP



**PUNJABI UNIVERSITY
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B.VOC (Cyber Security) 3rd Year (5th and 6th Semester)

For 2023-24, 2024-25 Session

Code	Title of Paper	Component	Credits	University Examination	Internal Assessment	Max. Marks	Exam. Duration Hours
BCSB3101T	Presentation Skills and Personality Development	General	4.5	60	40	100	3
BCSB3102T	Ethical Hacking- Level 3	General	4.5	60	40	100	3
BCSB3103T	Penetration Testing	Skill	4.5	60	40	100	3
BCSB3104T	Cloud Computing	Skill	4.5	60	40	100	3
BCSB3105T	Software Lab – IX	General	4.0	50	50	100	3
BCSB3106L	Software Lab – X	Skill	4.0	50	50	100	3
BCSB3107L	Software Lab – XI	Skill	4.0	50	50	100	3
		Total	30	390	310	700	

1. The breakup of marks for the practical will be as under:

- | | | |
|------|---|----------|
| i. | Internal Assessment | 50 Marks |
| ii. | Viva Voce (External Evaluation) | 20 Marks |
| iii. | Lab Record Program Development and Execution(External Evaluation) | 30 Marks |

1. The breakup of marks for the internal assessment for theory Subjects will be as under:

- | | | |
|----|--|----------|
| i. | Average of Both Mid Semester Tests / Internal Examinations | 24 Marks |
| i. | Attendance | 8 Marks |
| i. | Written Assignment/Project Work etc. | 8Marks |

**SYLLABUS
FOR
B.VOC (Cyber Security) Third Year (6th Semester)
For 2023-24, 2024-25 Session**

CODE	TITLE OF PAPER	INTERNAL ASSESSMENT	EXTERNAL	MAXIMUM MARKS
BCSB3201P	PROJECT	150	250	400

6-month Industrial Training

Credit: 18



Semester-V

BCSB3101T: Presentation Skills and Personality Development

Max. Marks: 60 Marks

Min. Pass Marks: 35%

Min. Time: 3hrs

Lectures to be delivered: 55-65

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B and the entire section C.

Section – A: Literature

Prescribed Text: Popular Short Stories.

From the prescribed text the following stories are to be read: A Cup of Tea – Katherine Mansfield.

The Open Window – H.H. Munro (“Saki”)

The Gift of the Magi – O. Henry

The Ant and the Grasshopper – W. Somerset

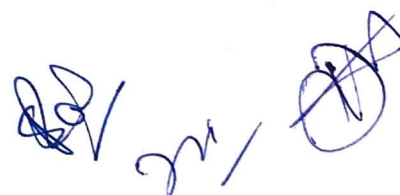
Maugham The Necklace – Guy De Maupassant

Section B: Grammar and Writing Skills Tenses

- Voice
- Narration
- Letter Writing – Formal
- Resume/C.V. Writing
- Report Writing
- Note making, Summarizing and Abstracting

Books Recommended:

- The Written Word by Vandana R. Singh: Oxford University Press.
- Popular Short Stories: Oxford University Press
- Oxford Practice Grammar by John Eastwood : Oxford University Press
- Oxford Advanced Learner’s Dictionary.



BCSB3102T: Ethical Hacking-Level 3

Max Marks: 60

Min Pass Marks: 35%

**Maximum Time: 3 Hrs.
Lectures to be delivered: 55-65**

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION-A

IDS/IPS and Honey pots: Rules for IDS/IPS, Honey pots Detection, Evasion Techniques, Security Measures for IDS, Unified Threat Management (UTM), Rules set for UTM, Virtual Private Network (VPN), Network Vulnerability Assessment Automated & Manually

Android Ethical Hacking & Security: Ethical Hacking Practical on Smartphone, Securing your Android mobile from being hacked, Cyber Threats for Mobile, Android Rooting and Testing for Exploits, Securing your family with Android Apps, Smartphone Data Recovery

Web Server Ethical Hacking: Types of Web servers and their Security, Web Server Enumeration, Attacking a Web server, Directory Traversal attack, Methodology for Web server attack, Using HTTrack to find backdoor in Web server, Testing the Payload on server, Brute force attack, Security and Defending against Web Server Attacks, Upgrading a Web server

Session Hijacking Ethical Hacking: Session Hijacking, Process of Session Hijacking, Types of Session Hijacking, Testing for Session Hijacking, Browser Hijacking, Coping with Session Hijacking, Coding Standards and Session Management, Evaluating the Cookies

Advance Google hacking: Advance Google hacking, Google Hacking Database, Google Dorks for SQL and Advance SQL Injection, Enumerating the Website's Security & Publicly Available Data, Deep Web vs Dark Web

SQL Injection: SQL Injection, Case Studies, SQL Injection Technologies, Types of SQL Injection, Steps to Perform SQL Injection, Advance SQL Injection, SQL Injection Tool-Kit, Security Methods against SQL Injection

SECTION-B

Web Application Ethical Hacking: Architecture of a Web Application, Hacking Threats for a Web Application, Cross Site Scripting (XSS), Cross Site Request Forgery (CSRF), Data Storage and Functionality testing of a Web Application, Detecting a Web Application Attack, Vulnerability Testing Tools, Security against Web Application Attack

Shell: Shell Injection, Local File Inclusion (LFI) & Remote File Inclusion (RFI), Live Demonstration of Shell Injection on Web Server, Evaluating the Coding Standards

Tamper data: Intercepting between Server and Client Side, Understanding the GET and POST, Burp Suit & OWASP ZAP, Tampering Website's Data

Securing a Website: Web Application Firewall Introduction, AWS Web Application Firewall and Another Popular Firewall, Input Validations, Sanitisation the Input, Website Vulnerability Assessment Automated & Manually

Cloud Computing Ethical Hacking: Services of Cloud Computing, Loop Holes in Cloud Computing, Attack Methods for Cloud Services, Securing the Cloud (Manually and with Tools), Using Cloud Service for DDOS Protection and Session Hijacking

Practice Sets for Website Ethical Hacking: Bwap, Word Press Website Hacking, Dam Vulnerable Application, OWASP Top 10 Vulnerability

Reference Books:

1. Thomas Mathew, Ethical Hacking, 0571 Publisher, 2003. 13
2. Joel SeatnbraV and George Kurtz, Hacking Exposed: Network Security Secrets & Solutions, Stuart McClure, McGraw-Hill, 2005

The image shows three handwritten marks in blue ink. On the left is a signature that appears to be 'Ravi'. In the center are the initials 'JG'. On the right is a signature that appears to be 'George Kurtz'.

BCSB3103T: Penetration Testing

Max Marks: 60

Min Pass Marks: 35%

Maximum Time: 3 Hrs.

Lectures to be delivered: 55-65

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION –A

Penetration Testing Process: Pre-engagement, Methodologies, Reporting,

Introduction to Web Applications: HTTP/S Protocol Basics, Encoding, Same Origin, Cookies, Sessions, Web Application Proxies

Information Gathering: Gathering information on your target, Infrastructure, Fingerprinting frameworks and applications, Fingerprinting custom applications, Enumerating resources, Relevant information through misconfigurations, Google hacking, Shodan HQ

Cross-Site Scripting: Cross-Site Scripting, Anatomy of an XSS Exploitation, The three types of XSS, Finding XSS, XSS Exploitation, Mitigation

SQL Injection: Introduction to SQL Injections, Finding SQL Injections, Exploiting In-band SQL Injections, Exploiting Error-based SQL Injections, Exploiting blind SQLi, SQL Map, Mitigation Strategies, From SQLi to Server Takeover.

Authentication and Authorization: Introduction, Common Vulnerabilities, Bypassing Authorization,

Session Security: Weaknesses of the session identifier, Session hijacking, Session Fixation, Cross-Site Request Forgeries

SECTION –B

Flash Security: Introduction, Flash Security Model, Flash Vulnerabilities, Pen testing Flash Applications

HTML5: Cross-Origin Resource Sharing, Cross-Window Messaging, Web Storage, Web Socket, Sandboxed frames

File and Resource Attacks: Path Traversal, File Inclusion Vulnerabilities, . Unrestricted File Upload,

Other Attacks: Click jacking, HTTP Response Splitting, Business Logic Flow, Denial of Services.

Web Services: Introduction, Web Services Implementations, The WSDL Language, and Attacks.

X Path: XML Documents and Databases, X Path, Detecting X Path Injection, Exploitation, Best Defensive Techniques.

Reference Books :

1. Georgia Weidman, "Penetration Testing".
2. Patrick Engebretson, "The Basics of Hacking and Penetration Testing", Ethical Hacking and Penetration Testing Made Easy.

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 9 marks. Section C will consist of one compulsory question having 12 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION –A

Introduction: Definition of Cloud, Basics of Cloud Computing, Characteristics of Cloud, Benefits of Cloud, Driving factors towards the use of Cloud Computing, Comparing Cloud with Grid Computing Systems, Workload Patterns for the Cloud, Selection criteria for migrating into Cloud, Application of Cloud Computing.

Basic Concepts and Virtualization: Cloud Computing Evolution, Big Data Concept, Elasticity and scalability, Virtualization: characteristics of virtualization, Benefits of virtualization, Forms of CPU virtualization, Hypervisors, VMWare, Multitenancy, Application programming interfaces (API), Billing and metering of Cloud services, Economies of scale, Management, Tooling, and automation in Cloud Computing, SLA in Cloud Computing.

Cloud Computing Service Delivery Models: Cloud service delivery models, Cloud Reference Model, Infrastructure as a service (IaaS) architecture, details, examples and applications, Platform as a service (PaaS) architecture, details, examples and applications, Software as a service (SaaS) architecture, details, examples and applications, NIST architecture.

SECTION –B

Cloud Deployment Models: Cloud deployment models, Private Clouds, Public Clouds, Hybrid Clouds, Community, Virtual private Clouds, Heterogeneous and Homogenous Clouds, Vertical and special purpose Clouds, Migration paths for Cloud, Selection criteria for Cloud deployment.

Cloud Security: Cloud Security challenges and risks, Principal Characteristics of Cloud Computing security, Cloud Computing Security Reference Model, How security gets integrated, Principal security dangers to Cloud Computing, Virtualization and Multitenancy, Internal security breaches, Data corruption or loss, User account and service hijacking, Steps to reduce Cloud Security breaches, Identity and access management, Cloud forensics, Digital signature, SSL.

Reference Books:

1. Barrie Sosinsky, Cloud Computing Bible, Wiley.
2. Michael Miller, Cloud Computing, QUE Publications.
3. Judith Hurwitz, Robin Bloor, Marcia Kaufman, Fern Halper, Cloud Computing for Dummies, Wiley.

BCSB3105L: Software Lab – IX (Based on BCSB3102T)

Max Marks: 50

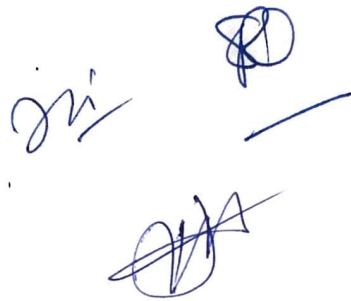
Min Pass Marks: 35%

Maximum Time: 3 Hrs.

This laboratory course will comprise as exercises to supplement what is learnt under paper
BCSB3102T: Ethical Hacking-Level 2

*Maximum Marks for Continuous Assessment: 50

Maximum Marks for University Examination: 50

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BCSB3106L: Software Lab – X (Based on BCSB3103T)

Max Marks: 50

Maximum Time: 3 Hrs.

Min Pass Marks: 35%

This laboratory course will comprise as exercises to supplement what is learnt under paper
BCSB3103T: Penetration Testing

*Maximum Marks for Continuous Assessment: 50

Maximum Marks for University Examination: 50

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BCSB3107L: Software Lab – XI (Based on BCSB3104T)

Max Marks: 50




Min Pass Marks: 35%

Maximum Time: 3 Hrs.

This laboratory course will comprise as exercises to supplement what is learnt under paper
BCSB3104T: Cloud Computing

*Maximum Marks for Continuous Assessment: 50

Maximum Marks for University Examination: 50

SYLLABUS FOR

B.VOC (Cyber Security) Third Year (6th Semester)

For 2023-24, 2024-25

Session

CODE	TITLE OF PAPER	MAXIMUM MARKS
BCSB3201P	PROJECT	400
	TOTAL	400

1. **6-month Industrial Training**
- External Credit: 18**
Internal Credits-12
Total Credits-30

Internal:150 (Credits-12)

External Viva: 250

1. Student have to submit any of the Three certificates (Exp.NSS-3/NCC-3/Red Cross-3/Youth Club-3/1-NSS &1NCC&1 Red cross/any Three) from the below activities for 12 Credits of General Studies. Each certificate has 4 credits. Total Credits-12.

- a. NSS
- b. NCC
- c. Red Cross
- d. Youth Club

Project Marks Distribution

1. The evaluation committee will distribute these marks for seminar/viva/project report and for any other activity, which the committee thinks to be proper.
2. Joint projects will be allowed and joint project reports will also be accepted. Individual project reports will be recognised and the students should highlight their contributions in a joint project report.
3. The Students must prefer doing Industrial Training and try to avoid the training in the computer Institutes where there is no Cyber Security work and mere training is given. In case students are not able to find training in any Industry, they may opt for doing this project training in the Department on some live project related to the automation of any University Department functionality or any Project given by the concerned teacher.

Committee for Evaluation of project report/work:

- i. Head of the Department
- ii. Internal Guide (if any)
- iii. One or two nominee(s) of Dean, Academic Affairs
- iv. External Examiner

Quorum will be of any three members.

**OUTLINES OF TESTS,
SYLLABI AND COURSES OF READING**

FOR

**POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS
(ANNUAL)**

PROGRAM CODE : PGDC1PUP

2022 & 2023 EXAMINATIONS

(As per RUSA Guidelines)



**PUNJABI UNIVERSITY
PATIALA**

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SYLLABUS

POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS (PGDCA Annual) (2022 & 2023 EXAMINATIONS)

PROGRAM CODE : PGDC1PUP

Paper code	Title of the paper	University Examination	Internal Assessment	Maximum Marks
PGDCA101T	Introduction to Information Technology	80	20	100
PGDCA102T	Operating System	80	20	100
PGDCA103T	Database Management System	80	20	100
PGDCA104T	Problem solving using C	80	20	100
PGDCA105T	Introduction to Computer Network Internet and E-Commerce	80	20	100
PGDCA106T	Management Information System	80	20	100
PGDCA107L	Software Lab-I (DOS, Windows, Unix)	40	60	100
PGDCA108L	Software Lab-II (MS-Office : Excel, Word, Power Point, MS-Access)	40	60	100
PGDCA109L	Software Lab-III (Programs to be implemented in C)	40	60	100
PGDCA110L	Software Lab-IV (Web Designing, HTML and Other Scripting Languages)	40	60	100

Continuous Assessment:

The break-up is as follows

1. Two or three tests out of which minimum two will be considered for assessment.

60% of the marks allotted for continuous assessment.

2. Seminars/Assignment/Quizzes

30% of the marks allotted for continuous assessment.

3. Attendance, class participation

10% of the marks allotted for continuous and behaviour assessment.

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PGDCA101T: INTRODUCTION TO INFORMATION TECHNOLOGY

Maximum Marks : 80
Minimum Pass Marks : 40 %

Lectures to be delivered: 40-50
Time allowed : 3 Hrs.

A) INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three Sections: A, B and C. Sections A and B will have four questions each from the respective section of the syllabus and will carry 16 marks for each question. Section C will consist of 7-16 short answer type questions covering the entire syllabus uniformly and will carry a total of 16 marks.

B) INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt five questions in all, selecting two questions each from Section A and Section B and compulsory question of Section C.
2. Use of non-programmable scientific calculator is allowed.

SECTION-A

Historical Evolution of Computer: characterisation of computers, types of computers, the computer generations.

Basic Anatomy of Computers: memory unit, input-output unit, arithmetic logic unit, control unit, central processing unit, RAM, ROM, PROM, EPROM.

Input-Output Devices: punched hole devices, magnetic media devices, printers, keyboard, scanners, other devices such as plotters, voice recognition and response devices, off-line data entry devices.

Number System: non-positional and positional number systems, base conversion, fractional numbers, various operations on numbers.

Computer Code: computer words, characters data, weighted and non weighted code, BCD, EBCDIC, ASCII, grey code.



Boolean Algebra and Logic Circuit: Boolean algebra, Boolean functions, logic gates.

SECTION-B

Computer Software : Introduction, types of software, systems software, GUI, operating system, high level languages, assemblers, compilers and interpreters, system utilities, application packages, stages in the development of software, program testing and debugging, program documentation, concept of firmware.

Networking: Basics, types of networks (LAN, WAN, MAN), hardware and software for LAN and WAN, topologies, Information, data processing, Data base concepts, database redundancy, inconsistency, difficulty in accessing the data, concurrent access anomalies, security problem, integrity of data.

Books :

1. V Rajaraman, " Fundamentals of Computer", PHI, N. Delhi, 1996.
 2. N Subramaniam, "Introduction to computers", Volume -I.
 3. Dr. Rajesh Trehan, "A complete book on IT", Cyber Tech.
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PGDCA102T: OPERATING SYSTEMS

Maximum Marks : 80
Minimum Pass Marks : 40 %

Lectures to be delivered: 40-50
Time allowed : 3 Hrs.

A) INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three Sections: A, B and C. Sections A and B will have four questions each from the respective section of the syllabus and will carry 16 marks for each question. Section C will consist of 7-16 short answer type questions covering the entire syllabus uniformly and will carry a total of 16 marks.

B) INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt five questions in all, selecting two questions each from Section A and Section B and compulsory question of Section C.
2. Use of non-programmable scientific calculator is allowed.

SECTION-A

Introduction to operating System: Need of operating system, operating system services, Definition, Early systems

Types of operating systems: Batch processing operating system, Multiprogramming operating system, Time Sharing operating system, Multi tasking operating system, Distributed operating system, Network operating system, Real time operating system, Multi processor System and parallel processing.

Disk Operating System (DOS): Booting process of DOS, Purpose of autoexec.bat and config.sys, internal commands and external commands, using wild card characters, Creating batch files, getting and setting date, time and prompt, Disk related commands-Format, Fdisk, Chkdsk, Scandisk, Defrag.

SECTION-B

Windows: GUI, Icon, Toolbar.

Working with files, closing and saving a file.

Mouse Mechanics-Click, Double click, Drag and drop method.

Installation of a new software, Control panel, Explorer, Accessories, network neighbourhood, System tools, Recycle bin, Files and Directory management under windows, Running programs.

Unix: Structure of Unix, Kernel and shell, Commands of Unix, Unix file system, own file system, Electronic mail.

Vi Editor: Editing text, screen controls.

Printing and spooling.

Text books:

1. Andy Rathbone, "Windows for dummies", Pustakmahal, 2nd ed. 1996.
2. Stan Kelly-Bootle, "Understanding UNIX", BPB Publications (ed. 1997).
3. Silverschatz, "Operating system concepts", Pearson education India, 5th ed. 1998.

PGDCA103T: DATABASE MANAGEMENT SYSTEM

Maximum Marks : 80
Minimum Pass Marks : 40 %

Lectures to be delivered: 40-50
Time allowed : 3 Hrs.

A) INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three Sections: A, B and C. Sections A and B will have four questions each from the respective section of the syllabus and will carry 16 marks for each question. Section C will consist of 7-16 short answer type questions covering the entire syllabus uniformly and will carry a total of 16 marks.

B) INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt five questions in all, selecting two questions each from Section A and Section B and compulsory question of Section C.
2. Use of non-programmable scientific calculator is allowed.

SECTION A

Introduction: Database Approach, Characteristics of a Database Approach, Database System Environment.
Roles in Database Environment: Database Administrators, Database Designers, End Users, Application Developers.

Database Management Systems: Definition, Characteristics, Advantages of Using DBMS Approach, Classification of DBMSs.

Architecture: Data Models, Categories of Data Models- Conceptual Data Models, Physical data Models, Representational Data Models, such as, Object Based Models, Record Based Models, Database Schema and Instance, Three Schema Architecture, Data Independence – Physical and Logical data Independence.

Database Conceptual Modelling by E-R model: Concepts, Entities and Entity Sets, Attributes, Mapping Constraints, E-R Diagram, Weak Entity Sets, Strong Entity Sets.
Enhanced E-R Modelling: Aggregation, Generalization, Converting ER Diagrams to Tables.

Relational Data Model: Concepts and Terminology, Characteristics of Relations.
Constraints: Integrity Constraints- Entity and Referential Integrity constraints, Keys- Super Keys, Candidate Keys, Primary Keys, Secondary Keys and Foreign Keys.

SECTION B

Relational Algebra: Basic Operations, Additional Operations, Example Queries.
Database Design: Informal Design Guidelines for Relation Schemas, Problems of Bad Database Design, Normalization: Functional Dependency, Full Functional Dependency, Partial Dependency, Transitive Dependency, Normal Forms– 1NF, 2NF, 3NF, Boyce-Codd NF,

MS-ACCESS: introduction to MS-ACCESS, working with databases and tables, queries in Access, Applying integrity constraints, Introduction to forms, sorting and filtering, controls, Reports and Macro: creating reports, using Macros.

Text Book:

1. ElmisryNawathy, "Introduction to Database Systems", Pearson Education India.
2. Content Development Group "Working with MS-OFFICE 2000", TMH.

References:

1. Henry F. Korth, Abraham, "Database System Concepts", Tata McGraw Hill.
2. Naveen Prakash, "Introduction to Database Management", TMH, 1993.
3. C.J. Date, "An Introduction to Data Base Systems", Pearson Education India.

PGDCA104T: PROBLEM SOLVING USING C

Maximum Marks : 80
Minimum Pass Marks: 40 %

Lectures to be delivered: 40-50
Time allowed: 3 Hrs.

A) INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three Sections: A, B and C. Sections A and B will have four questions each from the respective section of the syllabus and will carry 16 marks for each question. Section C will consist of 7-16 short answer type questions covering the entire syllabus uniformly and will carry a total of 16 marks.

B) INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt five questions in all, selecting two questions each from Section A and Section B and compulsory question of Section C.
2. Use of non-programmable scientific calculator is allowed.

SECTION A

Programming process: Problem definition, program design, coding, compilation and debugging
Identifiers and keywords, data types, input and output, type conversion, operators and expressions:
Arithmetic, unary, logical and relational operators, assignment operator, conditional operator, library functions.

Control statements: branching, looping using for, while and do-while statements, nested control structures, switch, break and continue statement.

Functions: definition, call prototype and passing arguments to a function, recursion versus iteration.

Storage classes: automatic, external and static variables.

SECTION B

Arrays: Definition, accessing elements, initialization, passing to functions, multi dimensional arrays, strings
Pointers: address and dereferencing operators, declaration, assignment, passing pointer to functions, pointer arrays.

Structure: variables, accessing members, nested structures, pointer to structures, self referential structures.

Searching and sorting techniques, linear and binary search, bubble, insertion, selection and quick sorting on array and their comparisons.

Text Books

1. Byron Gottfried, "Programming with C, Second edition, Schaum's outline series" TMH
2. Shubhnandan S. Jamwal, Programming in C, Pearson Publications

Reference books:

1. Ram Kumar and Rakesh Aggarwal : Programming in Ansi C, TMH.
2. B.W. Kerrighan and D.M. Richie, "The C programming language", 2nd edition, PHI.
3. H.H. Tan & T.B. Dorazio, "C Programming for engineers & Computer Science", McGraw Hill international edition.

6/c

PGDCA105T: INTRODUCTION TO COMPUTER NETWORK, INTERNET AND E-COMMERCE

Maximum Marks : 80
Minimum Pass Marks: 40 %

Lectures to be delivered: 40-50
Time allowed :3 Hrs.

A) INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three Sections: A, B and C. Sections A and B will have four questions each from the respective section of the syllabus and will carry 16 marks for each question. Section C will consist of 7-16 short answer type questions covering the entire syllabus uniformly and will carry a total of 16 marks.

B) INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt five questions in all, selecting two questions each from Section A and Section B and compulsory question of Section C.
2. Use of non-programmable scientific calculator is allowed.

SECTION A

Computer Networks : definition, need for computer networks and advantages, Hardware, Software, Users, Reference Models : OSI Reference Model, TCP/IP reference Model,
Types of Networks: LAN, WAN, MAN, and value added network, there features, network topologies

Transmission media: magnetic media, twisted pair, co-axial cable, radio transmission, line of sight transmission and communication satellite, wireless transmission.
Switching: Virtual Circuits versus Circuit Switching.

SECTION B

Introduction to Internet: Relays: Repeaters, Bridges, Routers, Gateways.
Internet working: How networks differ, concatenated virtual circuits, connectionless internetworking, Firewalls, internet architecture.
Applications of internet: Email, WWW and multimedia, FTP: introduction, data transfer and distributed computation.
WWW: the client side, the server side, web browser, Net surfing.

Electronic Commerce Framework, Electronic Commerce and media Convergence, The Anatomy of E-commerce Applications.
Electronic Data Interchange, EDI Applications in Business, EDI: Legal, Security and Privacy Issue.

Text Books :

1. Andrew S. Tanenbaum, "Computer Networks", Pearson Education India.

Reference books:

1. Douglas E. Comer, "Computer Networks and Internets" Pearson Education.
2. Achute S Godbole, "Data Communications and Networks", Tata Mcgraw Hill.

5/10

PGDCA106T: MANAGEMENT INFORMATION SYSTEM

Maximum Marks : 80
Minimum Pass Marks: 40 %

Lectures to be delivered: 40-50
Time allowed: 3 Hrs.

A) INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three Sections: A, B and C. Sections A and B will have four questions each from the respective section of the syllabus and will carry 16 marks for each question. Section C will consist of 7-16 short answer type questions covering the entire syllabus uniformly and will carry a total of 16 marks.

B) INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt five questions in all, selecting two questions each from Section A and Section B and compulsory question of Section C.
2. Use of non-programmable scientific calculator is allowed.

SECTION A

Framework of Management Information Systems: Importance's of MIS, Concepts of Management, information, system, Definition of MIS, information technology and MIS, nature and scope of MIS, MIS characteristics and functions.

Structure and classification of MIS: structure of MIS, MIS classification, Brief introduction of functional information system, financial information system, marketing information system, production/ Manufacturing information system, human resources information system.

Decision making and MIS: decision making, Simon's model of decision making, types of decisions, purpose of decision making, level of programmability, knowledge of outcomes, methods of choosing among alternatives, decision making and MIS.

Information and system concepts: types of information: strategic information, Tactical information, Operational information. Information quality, dimensions of information, System: Kinds of Systems, System related concepts, elements of systems, Human as an information processing system.

SECTION B

System development stages: System investigation, system analysis, system design, construction and testing, implementation, maintenance.

System development approaches (a brief introduction): waterfall model, pro-typing, iterative enhancement model, spiral model.

System analysis: introduction, requirement definition, , strategies for requirement definition, structured analysis tools: data flow diagram, data dictionary, decision trees , structured English, decision trees.

System Design: objectives, conceptual design, design methods, detailed system design.

Implementation and evaluation of MIS: implementation process, Hardware and software selection, Evaluation MIS, System maintenance.

Information system Planning: Information system Planning, planning terminology, the Nolan stage model, selecting a methodology, information resources management.

Information system (IS) as an Enabler: introduction, changing concepts of IS , IS as an enabler

Text books:

D.P. Goyal, "Management information systems", Macmillan India Ltd.

References:

1. Bentley, "System Analysis and Design", TMH.
2. Robert G. Murdick & Joel E. Ross & James R. Claggett, "Information Systems for Modern Management" PHI.
3. Gordon B. Davis & M.H. Olson, "Management Information Systems: Conceptual Foundation, structure & Development".

4/c

PGDCA107L: SOFTWARE LAB-I (DOS, WINDOWS, UNIX)

Maximum Marks 100 *
Minimum Pass marks : 40%

Practical Unites to be conducted 40-50
Time allotted : 3 Hrs.

DOS: Booting under DOS, Internal and External Commands of DOS,

WINDOWS: Windows concepts, features, windows structure, desktop, taskbar, start menu, my computer, Recycle Bin, Windows Accessories. System Tools, communication, Sharing Information between Programs.

UNIX: Booting Process, Kernel, Shell, Directory structure and commands, vi editor

*Maximum Marks for continuous assessment : 60
Maximum Marks for University examination : 40



PGDCA108L: SOFTWARE LAB-II (MS OFFICE: EXCEL, WORD, POWERPOINT, and MS ACCESS)

Maximum Marks 100 *
Minimum Pass marks : 40%

Practical Unites to be conducted 40-50
Time allotted : 3 Hrs.

Word Processing: MS Word: - Introduction to Word Processing, Interface, Toolbars, Ruler, Menus, Keyboard Shortcut, Editing a Document, Previewing documents, Printing documents, Formatting Documents, Checking the grammar and spelling, Formatting via find and replace, Using the Thesaurus, Using Auto Correct, Auto Complete and Auto Text, word count, Hyphenating, Mail merge, mailing Labels Wizards and Templates, Handling Graphics, tables and charts, Converting a word document into various formats.

Worksheets: MS EXCEL - Creating worksheet, entering data into worksheet, heading information, data, text, dates, alphanumeric, values, saving & quitting worksheet, Opening and moving around in an existing worksheet, Toolbars and Menus, keyboard shortcuts, Working with single and multiple workbook, Working with formulas & cell referencing, Formatting of worksheet.

Exercises related to section (D) of Paper PGDCA ~~1037~~

MS-Powerpoint: Creating slides, Applying transitions and sound effects, setting up slide shows, Animation.

*Maximum Marks for continuous assessment : 60
Maximum Marks for University examination : 40

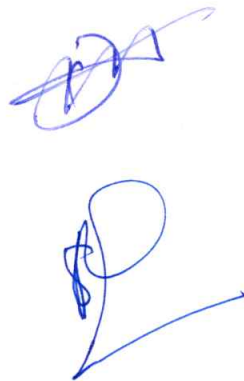
PGDCA109L: SOFTWARE LAB-III (PROGRAMMING TO BE IMPLEMENTED IN C)

Maximum Marks 100 *
Minimum Pass marks : 40%

Practical Unites to be conducted 40-50
Time allotted : 3 Hrs.

1. Programs to be developed based upon various constructs in the C language
2. Searching and sorting algorithm to be developed in C language.

*Maximum Marks for continuous assessment : 60
Maximum Marks for University examination : 40



PGDCA110L: SOFTWARE LAB-IV (WEB DESIGNING, HTML AND OTHER SCRIPTING LANGUAGES)

Maximum Marks 100 *
Minimum Pass marks : 40%

Practical Unites to be conducted 40-50
Time allotted : 3 Hrs.

- HTML: Tables, Forms, Frames and other Text Formating Tags
- DHTML: Cascading Style Sheets and Document Object Model
- Javascript: Introduction to Javascript.

*Maximum Marks for continuous assessment : 60
Maximum Marks for University examination : 40

