

FACULTY OF ENGINEERING & TECHNOLOGY

**SYLLABUS FOR THE BATCH FROM
YEAR 2020 TO YEAR 2023**

FOR

**BACHELOR OF VOCATION (B.VOC.)
WEB TECHNOLOGY & MULTIMEDIA
(Semester: I – VI)**

EXAMINATION: 2020–23



**GURU NANAK DEV UNIVERSITY,
AMRITSAR.**

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BACHELOR OF VOCATION (B.VOC.) (WEB TECHNOLOGY & MULTIMEDIA)
Batch from Year 2020 to Year 2023

SCHEME

Semester – I:

Paper No.	Subjects	M. Marks		Total
		Th.	Pr.	
Paper – 101	Computer Fundamentals and MS Office	50	25	75
Paper – 102	Markup Languages (HTML,HTML5, and CSS)	50	50	100
Paper – 103	Programming Fundamentals (C & C++)	50	25	75
Paper – 104	Adobe Photoshop	–	50	50
Paper – 105	Communication Skills in English – I	50	–	50
Paper – 106	Punjabi (Compulsory) / ** ਮੁੱਢਲੀ ਪੰਜਾਬੀ / ** Punjab History & Culture (From Earliest Times to C 320)	50		50
				400

Semester – II:

Paper No.	Subject			
Paper – 107	Web Programming with PHP-I	50	50	100
Paper – 108	Design & Layout (Dreamweaver)	–	50	50
Paper – 109	Analysis and Design for Web Applications	50	–	50
Paper – 110	JavaScript-I	50	50	100
Paper – 111	Communication Skills in English – II	35	15	50
Paper – 112	Punjabi (Compulsory) / ** ਮੁੱਢਲੀ ਪੰਜਾਬੀ / ** Punjab History & Culture (C 320 TO 1000 B.C.)	50	–	50
	* Drug Abuse: Problem, Management and Prevention (Compulsory Paper)	100		100
				400

Note: * Marks of this Paper will not be included in the Total Marks.

**** (Special Paper in lieu of Punjabi Compulsory)**

(For those students who are not domicile of Punjab)

BACHELOR OF VOCATION (B.VOC.) (WEB TECHNOLOGY & MULTIMEDIA)
Batch from Year 2020 to Year 2023

Semester : III

Paper No.	Subject	M.Marks		Total
		Th.	Pr.	
301.	Java Script II	50	50	100
302.	Operating System	50	50	100
303.	Java programming	-	100	100
304.	Wordpress	-	100	100
				400

Semester : IV

Paper No.	Subject	M. Marks		Total
		Th.	Pr.	
401.	Database System	50	50	100
402.	Software Engineering	100	-	100
403.	PHP-II	-	100	100
404.	Adobe Flash	-	100	100
	ESL-221: Environmental Studies (Compulsory)	100	-	100
				400

*** Marks of Paper EVS will not be included in Grand Total.**

BACHELOR OF VOCATION (B.VOC.) (WEB TECHNOLOGY & MULTIMEDIA)
Batch from Year 2020 to Year 2023

Semester : V

Paper No.	PAPER	M. Marks		Total
		Th.	Pr.	
501	Software Re-engineering	50	-	50
502.	Software Project Management and Business Solutions	50	-	50
503.	ASP.net with C#	-	100	100
504.	Software Testing & Quality Assurance	50	-	50
505.	Lab: Software Testing (Case Tools)	-	50	50
506.	Adobe Muse	-	100	100
				400

Semester : VI

Paper No.	PAPER	Marks		Total
		Report	On training	
601.	Major project (Industrial Training And Project in Current software Technologies)	200	200	400
				400

SEMESTER-I**PAPER-101: COMPUTER FUNDAMENTALS AND MS OFFICE****Time: 03.00 Hours each****Max. Marks: 50 (Theory)****Max. Marks: 25 (Practical)****Instructions for the Paper Setters: -**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A**Introduction to Computers**

Computer basics, History of computers, Classification of computers, Hardware and software, Data representation.

Components of Computer

Operating system, Input and output devices, Motherboard, CPU, Memory, Storage devices.

Introduction to Internet: About internet and its working, business use of internet, services offered by internet, evaluation of internet, internet service provider (ISP), internet addressing (DNS) and IP addresses).

E-Mail Basic Introduction: structure of an e-mail message, working of e-mail (sending and receiving messages).

SECTION-B

Internet Protocol: Introduction, file transfer protocol (FTP), Gopher, Telnet, other protocols like HTTP and TCPIP.

WWW: Introduction, working of WWW, Web browsing (opening, viewing, saving and printing a web page and bookmark)

Search Engine: About search engine, component of search engine, working of search engine, difference between search engine and web directory.

SECTION-C**Multimedia Basics**

Introduction to multimedia, Multimedia authoring tools and new digital media

Components of Multimedia

Text: About fonts and faces, Using text for multimedia, Introduction to Typography, Designing with text.

Image: Pixel, Vector and Raster graphics, Color Depth, Resolution, Aspect ratio, File formats, Compression.

Audio and Video: TV and video standards, Time code, Digital audio and video, File Formats, Compression, Codecs, Digital editing tools.

Animation: History of Animation, Types of Animation, Animation tools and Development.

SECTION-D

Microsoft Word

- Interface
- Toolbar
- Working with a document (Create, open, Save, Export etc.)
- Working with text
- Images and Tables
- Page layout (Headers and footers, Margins, Page and line numbers)
- Mail Merge
- Automating tasks (Smart documents, Macros)
- File formats and Export features

Microsoft Power Point

- Interface
- Working with a document (Create, open, Save, Export etc.)
- Creating and editing power point presentations (Slideshows, Animations, Transitions, graphics and charts)
- File formats and Export features.

Reference Books:

1. *“Understanding The Internet”, Kieth Sutherland, Butterworth-Heinemann; 1st Edition (October 31, 2000).*
2. *“Internet Technologies”, S. K. Bansal, APH Publishing Corporation (April 1, 2002).*
3. *“Data Communications and Networking”, Behrouz A. Forouzan, 3rd Edition.*
4. *“An Introduction to Digital Multimedia”, T. M. Savage, K. E. Vogel*
5. *“Multimedia: making it work”, Tay Vaughan*
6. *“Computer Basics and Beyond”, Michael A. Price.*

SEMESTER-I

Paper – 101 (Practical)

25 Marks

(Lab-I)

Lab – I: Based on MS word & MS PowerPoint and Internet usages

SEMESTER-I

PAPER102: MARKUP LANGUAGES (HTML, HTML5, CSS)

Time: 03.00 Hours each

Max. Marks: 50 (Theory)

Max. Marks: 50 (Practical)

Instructions for the Paper Setters: -

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Course Contents:

SECTION-A

Introduction to HTML

- Elements of Web page (Text, Image & Hyperlink Elements)
- Html Tags

Using Tools

- Structure of a page
- Links & Navigation
- Backgrounds
- Animated Graphics

Working with Tables

- Page Design & Layout with Links
- Advanced Layout with Tables
- Working Style Sheets

Forms & Frame

- HTML Forms (<form> element, Form controls, creating labels for control, structuring forms, focus, sending form data to server)
- Using Frame (<frame>, <frameset> <noframes> element, creating links between frames, nested framesets)

SECTION-B

Introduction to HTML5

- HTML5 New Semantic Elements
- HTML5 Attributes
- HTML5 Document
- HTML5 - WEB FORMS 2.0
- HTML5 – EVENTS
- HTML5 – CANVAS
- HTML5 – SVG
- HTML5 – WEB STORAGE
- HTML5 - AUDIO & VIDEO
- HTML5 – GEOLOCATION
- HTML5 - DRAG & DROP

SECTION-C

- Introduction to CSS and understanding CSS syntax
- Adding Rules to a Style Sheet
- Managing style sheets (creating, Importing and embedding)
- Using selectors and classes
- Controlling page layout
- Understanding grouping and nesting
- Styling text
- Modifying background and foreground elements
- Understanding tables and lists
- Using global styles
- Understanding CSS box model
- Working with images
- Creating navigation bars using CSS

SECTION-D

Introduction to CSS3

- CSS3 Color
- CSS3 Gradients
- CSS3 Columns
- CSS3 Border Image
- CSS3 Background /Multiple backgrounds
- CSS3 Text Overflow
- CSS3 Text shadow

Reference Book:

1. *HTML: The complete reference* by Thomas A. Powell
2. *New perspectives on creating Web pages with HTML/DHTML* by Patrick Carey,
Mark Kemper
3. *CSS Cookbook* by Christopher Schmitt
4. *Beginning CSS Web Development: From Novice to Professional* by Simon Collison
5. *Professional CSS: Cascading Style Sheets for Web Design* by Christopher Schmitt.

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BACHELOR OF VOCATION (B.VOC.) (WEB TECHNOLOGY & MULTIMEDIA)
Batch from Year 2020 to Year 2023

SEMESTER-I

Paper – 102 (Practical)

50 Marks

(Lab-II)

Lab – II: Based on HTML & CSS

SEMESTER-I
PAPER-103 PROGRAMMING FUNDAMENTALS (C & C++)

Time: 03.00 Hours each

Max. Marks: 50 (Theory)

Max. Marks: 25 (Practical)

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Course Contents:

SECTION-A

Logic Development and Program Development Tools: Data Representation, Flowcharts, Problem Analysis, Decision Trees/Tables, Pseudo code and algorithms.

Fundamentals: Character set, Identifiers and Key Words, Data types, Constants, Variables, Expressions, Statements, Symbolic Constants.

Operations and Expressions: Arithmetic operators, Unary operators, Relational Operators, Logical Operators, Assignment and Conditional Operators, Library functions.

Data Input and Output: single character Input, single character output, entering input data, more about scan functions, writing output data, more about print functions.

SECTION-B

Control Statements: Preliminaries, While, Do-while and For statements, Nested loops, If-else, Switch, Break – Continue statements

Functions: Declaring and defining function, Local, global variables, Passing argument to function, Reference arguments, Overloading functions

SECTION-C

Object Oriented Programming

Objects & Classes.

Constructor & Destructor.

Operator overloading.

- a. Overloading unary operators.
- b. Overloading binary operators.
- c. Data conversion.
- d. Pitfalls operator overloading and conversion.

SECTION-D

Inheritance

- a. Derived class and Base Class.
- b. Derived Class Constructors.
- c. Overriding member functions.
- d. Inheritance in the English distances class, class hierarchies.
- e. Public and Private Inheritance.
- f. Level of inheritance.

Polymorphism

- a. Problems with single inheritance.
- b. Multiple inheritance.

References:

1. Balaguruswamy: "Programming in ANSI C".
2. Scaum Outline Series: "Programming in C".
3. Dennis & Ritchie: "Programming in C".
4. Stephen G. Kocher: "C Programming".
5. C++ & Graphics by Vijay Mukhi's
6. Turbo C++ by Robert Lafore.
7. Mastering C++.
8. C++ Programming Language by Schaum's outline series

Paper – 103 (Practical)

25 Marks

(Lab-III)

Lab – III: Based on C & C++:

SEMESTER-I**PAPER-104: ADOBE PHOTOSHOP****Time: 03.00 Hours****Max. Marks: 50 (Practical)****Instructions for the Paper Setters: -**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Course Contents:**SECTION-A****Introduction to Photoshop**

- About Digital Images
- Creating New Images
- Scanning New images
- Size and Resolution
- Managing Workspace

Using Tools

- Toolbox & Options
- Screen Modes
- Cut , Copy & Paste
- Working with selections
- Color modes

SECTION-B**Working with Layers**

- Layer Panel
- Creating , Deleting & Hiding Layers
- Layer Mask
- Clip Mask
- Group & Ungroup Layers
- Blending Modes

Adjustments and Transforming Layers

- Adjustment Layers
- Color correction
- Variations
- Retouching Images
- Clone Sources

SECTION–C

Painting and Drawing Tool

- Brushes
- Strokes
- Work Path
- Painting Tools

Working with Channels & Action

- Working with Channels
- Creating Actions
- Save New Action Group

SECTION–D

Working with Filters

- Applying Filters
- Liquefy
- Vanishing Point
- Filter Gallery

Working with Text and Extensions

- Type Tools
- Text with Path
- Adjusting & converting Text
- Detail of useful Extensions & use

References:

1. **“Adobe Photoshop CS6 Bible”** by Lisa Danae Dayley , Brad Dayley
2. **“Photoshop: The Ultimate Guide for beginners”** to learn Photoshop for Lightroom Users and Digital Photographers! (Adobe Photoshop - Graphic Design) by Edward Bailey

SEMESTER - I
PAPER-105: COMMUNICATION SKILLS IN ENGLISH-I
(THEORY)

Time: 3 Hours

Max. Marks: 50

Instructions for the Paper Setters: -

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

The syllabus is divided in four sections as mentioned below:

SECTION-A

Reading Skills: Reading Tactics and strategies; Reading purposes—kinds of purposes and associated comprehension; Reading for direct meanings.

SECTION-B

Reading for understanding concepts, details, coherence, logical progression and meanings of phrases/ expressions.

Activities:

- Comprehension questions in multiple choice format
- Short comprehension questions based on content and development of ideas

SECTION-C

Writing Skills: Guidelines for effective writing; writing styles for application, personal letter, official/ business letter.

Activities:

- Formatting personal and business letters.
- Organising the details in a sequential order

SECTION-D

Resume, memo, notices etc.; outline and revision.

Activities:

- Converting a biographical note into a sequenced resume or vice-versa
- Ordering and sub-dividing the contents while making notes.
- Writing notices for circulation/ boards

Recommended Books:

- *Oxford Guide to Effective Writing and Speaking* by John Seely.
- *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP

SEMESTER-I
PAPER-106: ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ : 50

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿੱਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ

ਸ਼ੈਕਸ਼ਨ-ਏ

ਸਰਵੋਤਮ ਪੰਜਾਬੀ ਸਾਹਿਤ (ਸੰਪਾ. ਡਾ. ਰਸਿੰਦਰ ਕੌਰ, ਡਾ. ਮੇਘਾ ਸਲਵਾਨ)

(ਕਵਿਤਾ ਅਤੇ ਕਹਾਣੀ ਭਾਗ)

ਸ਼ੈਕਸ਼ਨ-ਬੀ

ਇਤਿਹਾਸਕ ਯਾਦਾਂ

(ਜੀਵਨੀ 1 ਤੋਂ 6 ਤਕ)

ਵਿਸ਼ਾ ਵਸਤੂ/ਸਾਰ/ਨਾਇਕ ਬਿੰਬ

ਸ਼ੈਕਸ਼ਨ-ਸੀ

(ੳ) ਪੈਰਾ ਰਚਨਾ

(ਅ) ਪੈਰਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉਤਰ

ਸ਼ੈਕਸ਼ਨ-ਡੀ

ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ :

ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਅਤੇ ਉਪਭਾਸ਼ਾ ਵਿਚਲਾ ਅੰਤਰ,

ਪੰਜਾਬੀ ਉਪਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ ਚਿੰਨ੍ਹ, ਪੰਜਾਬੀ ਭਾਸ਼ਾ - ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਰਾਜਿੰਦਰਪਾਲ ਸਿੰਘ ਬਰਾੜ, **ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿਲੀ।
2. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, **ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਾਵਿ ਸਿਧਾਂਤ, ਇਤਿਹਾਸ ਅਤੇ ਪ੍ਰਵਿਰਤੀਆਂ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
3. ਬਲਦੇਵ ਸਿੰਘ ਧਾਲੀਵਾਲ, **ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿਲੀ।
4. ਸਤਿੰਦਰ ਸਿੰਘ, **ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿਲੀ।
5. ਡਾ. ਰਸਿੰਦਰ ਕੌਰ, **ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਸਫ਼ਰ ਤੇ ਸ਼ਾਸਤ੍ਰ ਭਾਗ**, ਸਿੰਘ ਬ੍ਰਦਰਜ਼, ਅੰਮ੍ਰਿਤਸਰ।
6. ਹਰਕੀਰਤ ਸਿੰਘ, **ਭਾਸ਼ਾ ਤੇ ਭਾਸ਼ਾ ਵਿਗਿਆਨ**, ਲਾਹੌਰ ਬੁਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ।
7. ਹਰਕੀਰਤ ਸਿੰਘ ਤੇ ਗਿਆਨੀ ਲਾਲ ਸਿੰਘ, **ਕਾਲਜ ਪੰਜਾਬੀ ਵਿਆਕਰਣ**, ਪੰਜਾਬ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ।
8. ਬੂਟਾ ਸਿੰਘ ਬਰਾੜ, **ਪੰਜਾਬੀ ਵਿਆਕਰਣ : ਸਿਧਾਂਤ ਤੇ ਵਿਹਾਰ**, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ।
9. ਸਿਨੀ ਸਲਵਾਨ, **ਪੰਜਾਬੀ ਵਿਆਕਰਣ : ਮੁਢਲੇ ਸੰਕਲਪ**, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
10. **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਬੋਧ**, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।

SEMESTER-I
PAPER-106: ਮੁੱਢਲੀ ਪੰਜਾਬੀ
((In lieu of Compulsory Punjabi)
(For those students who are not domicile of Punjab)

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 50

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿੱਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਠ-ਕ੍ਰਮ
ਸੈਕਸ਼ਨ-ਏ

- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ
- (ੳ) ਨਾਮਕਰਣ ਤੇ ਸੰਖੇਪ ਜਾਣ-ਪਛਾਣ : ਗੁਰਮੁਖੀ ਵਰਣਮਾਲਾ, ਅਖਰ ਕ੍ਰਮ, ਸਵਰ ਵਾਹਕ (ੳ ਅ ਏ), ਲਗਾਂ-ਮਾਤਰਾਂ, ਪੈਰ ਵਿਚ ਬਿੰਦੀ ਵਾਲੇ ਵਰਣ, ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਣ, ਬਿੰਦੀ, ਟਿਪੀ, ਅਧਕ।
- (ਅ) ਸਿਖਲਾਈ ਤੇ ਅਭਿਆਸ

ਸੈਕਸ਼ਨ-ਬੀ

ਗੁਰਮੁਖੀ ਆਰਥੋਗ੍ਰਾਫੀ ਅਤੇ ਉਚਾਰਨ : ਸਵਰ, ਵਿਅੰਜਨ : ਮੁਢਲੀ ਜਾਣ-ਪਛਾਣ ਅਤੇ ਉਚਾਰਣ, ਮੁਹਾਰਨੀ, ਲਗਾਂ-ਮਾਤਰਾਂ ਦੀ ਪਛਾਣ।

ਸੈਕਸ਼ਨ-ਸੀ

ਪੰਜਾਬੀ ਸ਼ਬਦ ਜੋੜ : ਮੁਕਤਾ (ਦੋ ਅਖਰਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਤਿੰਨ ਅਖਰਾਂ ਵਾਲੇ ਸ਼ਬਦ), ਸਿਹਾਰੀ ਵਾਲੇ ਸ਼ਬਦ, ਬਿਹਾਰੀ ਵਾਲੇ ਸ਼ਬਦ, ਔਕੜ ਵਾਲੇ ਸ਼ਬਦ, ਦੁਲੈਕੜ ਵਾਲੇ ਸ਼ਬਦ, ਲਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਦੁਲਾਵਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਹੋੜੇ ਵਾਲੇ ਸ਼ਬਦ, ਕਨੌੜੇ ਵਾਲੇ ਸ਼ਬਦ।

ਸੈਕਸ਼ਨ-ਡੀ

ਲਗਾਖਰ (ਬਿੰਦੀ, ਟਿਪੀ, ਅਧਕ ਵਾਲੇ ਸ਼ਬਦ)
ਸ਼ੁਧ, ਅਸ਼ੁਧ (ਪੈਰੇ ਵਿਚ ਲਿਖੇ ਅਸ਼ੁਧ ਸ਼ਬਦਾਂ ਨੂੰ ਸ਼ੁਧ ਕਰਨਾ)

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
2. ਪ੍ਰੋ. ਸ਼ੈਰੀ ਸਿੰਘ, ਪ੍ਰੋ. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, ਭਾਸ਼ਾ ਵਿਗਿਆਨ : ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
3. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਬੋਧ, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।
4. ਮਿੰਨੀ ਸਲਵਾਨ, ਪੰਜਾਬੀ ਵਿਆਕਰਨ : ਮੁਢਲੇ ਸੰਕਲਪ, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।

SEMESTER - I
PAPER-106: Punjab History & Culture (From Earliest Times to C 320)
(Special Paper in lieu of Punjabi Compulsory)
(For those students who are not domicile of Punjab)

Time: 3 Hours

Max. Marks: 50

Instructions for the Paper Setters

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION- A

1. Physical features of the Punjab and its impact on history.
2. Sources of the ancient history of Punjab

SECTION- B

3. Harappan Civilization: Town planning; social, economic and religious life of the Indus Valley People.
4. The Indo-Aryans: Original home and settlements in Punjab.

SECTION- C

5. Social, Religious and Economic life during *Rig* Vedic Age.
6. Social, Religious and Economic life during Later Vedic Age.

SECTION- D

7. Teachings and impact of Buddhism
8. Jainism in the Punjab

Suggested Readings

1. L. M Joshi (ed.), *History and Culture of the Punjab*, Art-I, Patiala, 1989 (3rd edition)
2. L.M. Joshi and Fauja Singh (ed.), *History of Punjab*, Vol.I, Patiala 1977.
3. Budha Parkash, *Glimpses of Ancient Punjab*, Patiala, 1983.
4. B.N. Sharma, *Life in Northern India*, Delhi. 1966.
5. Chopra, P.N., Puri, B.N., & Das, M.N.(1974). *A Social, Cultural & Economic History of India*, Vol. I, New Delhi: Macmillan India.

SEMESTER-II**PAPER-107: WEB PROGRAMMING WITH PHP-I****Time: 03.00 Hours Each****Max. Marks: 50 (Theory)****Max. Marks: 50 (Practical)****Instructions for the Paper Setters: -**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A**INTRODUCTION TO PHP**

- Basic Syntax
- Integrating PHP with HTML
- Defining variable and constant
- PHP Data type

OPERATORS & EXPRESSIONS

- Arithmetic, Assignment, Comparison, Logical Operators
- Concatenation, Bitwise, Error Suppression, Increment & Decrement operators
- Ternary operator

WORKING WITH FLOW CONTROL THROUGH CONTROL STATEMENT

- If statement
- If-else statement
- If-else ladder statement
- If-elseif-else statement
- Switch statement

WORKING WITH FLOW CONTROL THROUGH LOOP STATEMENT

- For statement
- While statement
- Do-while statement
- For and Foreach statement
- Nesting of Loops statement

SECTION-B

PHP FUNCTIONS

- Defining functions
- Using built-in functions
- Defining User functions
- Returning a value from a function
- Using variables in functions
- Passing values to a function
- Nesting of Functions
- Anonymous Functions
- Recursion
- Passing parameter(Call By Value & Call By Reference) & return value
- Trends of PHP Functions(Missing Parameter, Formal parameter declaration)
- Importing content of one page into another

HANDLING HTML FORM WITH PHP

- Capturing Form Data
- Dealing with Multi-value filed
- Generating File uploaded form
- Redirecting a form after submission

SECTION-C

USING ARRAYS IN PHP

- Anatomy of an Arrays
- Creating index based and Associative Arrays
- Storing Data in Arrays
- Accessing array Element
- Looping with Index based Arrays
- Converting Strings to and from Arrays
- Splitting and Joining Arrays

USING STRINGS IN PHP

- Introduction to string.
- Creating and Working with String
- Creating string
- Viewing string
- Modifying string
- Introduction of String Function
- Working with string function

SECTION-D

THE CORE LOGICS AND TECHNIQUES

- Introduction HTML Form Elements and Fields
- Understanding Functions, Important PHP Functions
- What are the Scope of variables
- String and Math functions in PHP
- Usage of Include and require statements
- Accessing PHP, HTTP Data
- Query Strings and Hyperlinks
- Describing Pre-Defined Variables – Super Global Arrays

Reference:

1. “Programming PHP” by Rasmus Lerdorf and Levin Tatroe, O’Reilly Publications.
2. “Sams Teach Yourself PHP, MySQL and Apache All in One” by Julie C. Meloni
3. “PHP and MySQL Web Development: A Beginner’s Guide” by Martty Mathew

SEMESTER-II
PAPER – 107 (PRACTICAL)

50 Marks

(Lab-IV)

Lab – IV: Practical based on above mentioned syllabus of PHP-I.

SEMESTER-II**PAPER-108: DESIGN & LAYOUT (DREAM WEAVER)****(Practical)****Time: 03.00 Hours****Max. Marks: 50****SECTION-A**

- The Dreamweaver Interface
- Site Controls
- Creating New Documents
- Adding Text and Structure
- Controlling font sizing

SECTION-B

- Working with Images
- Creating Links
- Working with Tables
- Working with Forms

SECTION-C

- Building Templates
- Behaviors and Rollovers
- Working with Flash and Video

SECTION-D

- Checking for browser compatibilities
- Synchronizing sites
- Updating and publishing files

References:

1. "Adobe Dreamweaver CS6 Classroom in a Book" by Adobe Creative Team
2. "Adobe Dreamweaver CS6 Bible" by Joseph Lowery
3. "Building Websites All-in-One For Dummies" by David Karlins ,Doug Sahlin

SEMESTER-II
PAPER-109: ANALYSIS AND DESIGN FOR WEB APPLICATIONS
(THEORY)

Time: 03.00 Hours

Max. Marks: 50

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Introductions to systems

- Basic principles of successful systems
- Systems models and types
- Types of system models
- Business system concept
- Real life business sub system
- Materials management sub systems
- Financial management sub system
- Marketing management
- Real time system
- Distributed system
- Manual and automated system
- What is participatory design?

SYSTEM ANALYST

- Introduction
- A brief history
- Attributes of effective system analyst
- Role of system analyst and designer
- Ethical considerations
- Need of system analyst
- Structured analysis tools
- Academic and personal qualification
- Responsibilities of system analyst
- System analyst as an agent to change

System Modeling

- Data flow diagram
- Decision table

SECTION-B

Introduction to Software: Definition, Software characteristics, Software components, Software crisis, Software Applications, Software Engineering Paradigms, Software Development Life Cycle.

Software Requirement Specification (SRS): Definition, Problem analysis, structuring information, Data flow diagram and data dictionary, structured analysis, Characteristics and component of (SRS), Design Objectives Design Principles, Design Methodology, Design Review.

SECTION-C

Introduction: Meaning and Concept, Advantages and Disadvantages, Electronic Commerce vs. Traditional Commerce, E-Commerce and Media Convergence; Autonomy of E-Commerce Applications, Types of E-Commerce; Architectural Framework for Electronic Commerce.

Business Requirement Specification (BRS): Effect of Internet on Business and Corporations, Business on Internet and vice-versa, Issues of business through Internet.

Business Models of E-Commerce and Infrastructure: E-Commerce Models, Supply Chain Management, Product and Service Digitization, Remote Servicing, Procurement; Online Marketing; Advertising; E-Commerce Resources and Infrastructure; Resources and Planning for Infrastructure.

SECTION-D

Web-Site Design: Role of Web site in B2C E-Commerce; Web-site strategies and Web-site Design Principles; Push and Pull technologies; Alternative methods of Customer communication.

References:

1. "System Analysis & Design" by Puneet Wadhwa
2. "Systems Analysis and Design" by Elias M Award
3. "E - Business and E - Commerce Management: Strategy, Implementation and Practice" by Dave Chaffey
4. "50 Reasons for Mastering Business Requirements Analysis" by Mohsin Baig

SEMESTER-II
PAPER- 110: JAVASCRIPT - I

Time: 03.00 Hours each

Max. Marks: 50 (Theory)

Max. Marks: 50 (Practical)

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

JAVASCRIPT BASICS

- Introduction to JAVASCRIPT
- Client-Side JavaScript
- Comments in JavaScript
- Structure of JavaScript

JavaScript Datatypes

JavaScript Variables

JavaScript Reserved Words

JavaScript Operators

SECTION-B

JavaScript control Structures

- If Statement
- If...else Statement
- If...else if... Statement
- Loop Control
- While Loop
- Do...while Loop
- For Loop
- For-in Loop
- Switch-Case

Functions

- Function Definition
- Calling a Function
- Function Parameters
- The return Statement
- Nested Functions
- Function () Constructor
- Function Literals

SECTION–C

Events

- Introduction to an event
- Onclick event type
- Onsubmit event type
- Onmouseover and onmouseout
- Html 5 standard events

Page Redirect

- What is Page Redirection?
- JavaScript Page Refresh
- Auto Refresh
- How Page Re-direction Works?

SECTION–D

Dialog Box

- Alert Dialog Box
- Confirmation Dialog Box
- Prompt Dialog Box

Void Keyword

Page Printing

- How to Print a Page?

References:

- 1) The ABCs of JavaScript by Lee Purcell, Mary Jane Mara ,BPB Publications
- 2) Mastering JavaScript and JScript by James Jaworski , BPB Publications

PAPER – 110 (PRACTICAL)

50 Marks

(Lab-V)

Lab – V: Based on JAVASCRIPT

SEMESTER - II

PAPER- 111: COMMUNICATION SKILLS IN ENGLISH – II

Time: 3 Hours

Max. Marks: 50
Theory Marks: 35
Practical Marks: 15

Instructions for the Paper Setters: -

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Course Contents:

SECTION–A

Listening Skills: Barriers to listening; effective listening skills; feedback skills.

Activities: Listening exercises – Listening to conversation, News and TV reports

SECTION–B

Attending telephone calls; note taking and note making.

Activities: Taking notes on a speech/lecture

SECTION–C

Speaking and Conversational Skills: Components of a meaningful and easy conversation; understanding the cue and making appropriate responses; forms of polite speech; asking and providing information on general topics.

Activities: 1) Making conversation and taking turns

2) Oral description or explanation of a common object, situation or concept

SECTION–D

The study of sounds of English,
Stress and Intonation,
Situation based Conversation in English,
Essentials of Spoken English.

Activities: Giving Interviews

PRACTICAL / ORAL TESTING

Marks: 15

Course Contents: -

1. Oral Presentation with/without audio visual aids.
2. Group Discussion.
3. Listening to any recorded or live material and asking oral questions for listening comprehension.

Questions: -

1. Oral Presentation will be of 5 to 10 minutes duration (Topic can be given in advance or it can be student's own choice). Use of audio visual aids is desirable.
2. Group discussion comprising 8 to 10 students on a familiar topic. Time for each group will be 15 to 20 minutes.

Note: Oral test will be conducted by external examiner with the help of internal examiner.

SEMESTER - II
PAPER- 112: ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ : 50

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿੱਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ-ਏ

ਸਰਵੋਤਮ ਪੰਜਾਬੀ ਸਾਹਿਤ (ਸੰਪਾ. ਡਾ. ਰਮਿੰਦਰ ਕੌਰ, ਡਾ. ਮੇਘਾ ਸਲਵਾਨ)
(ਨਿਬੰਧ ਅਤੇ ਰੇਖਾ ਚਿਤਰ)
ਰੇਖਾ ਚਿਤਰ ਦਾ ਨਾਇਕ ਬਿੰਬ, ਵਿਸ਼ਾ ਵਸਤੂ

ਸੈਕਸ਼ਨ-ਬੀ

ਇਤਿਹਾਸਕ ਯਾਦਾਂ

(ਜੀਵਨੀ 7 ਤੋਂ 12 ਤਕ)
ਵਿਸ਼ਾ ਵਸਤੂ/ਸਾਰ/ਨਾਇਕ ਬਿੰਬ

ਸੈਕਸ਼ਨ-ਸੀ

- (ੳ) ਸ਼ਬਦ ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਰਚਨਾ, ਪਰਿਭਾਸ਼ਾ, ਮੁਢਲੇ ਸੰਕਲਪ
(ਅ) ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ

ਸੈਕਸ਼ਨ-ਡੀ

ਦਫ਼ਤਰੀ ਚਿਠੀ ਪਤਰ
ਮੁਹਾਵਰੇ ਅਤੇ ਅਖਾਣ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਸਤਿੰਦਰ ਸਿੰਘ, ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦਾ ਇਤਿਹਾਸ, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿਲੀ।
2. ਪ੍ਰੋ. ਪਿਆਰਾ ਸਿੰਘ, ਪੰਜਾਬੀ ਵਾਰਤਕ : ਸਿਧਾਂਤ ਇਤਿਹਾਸ ਪ੍ਰਵਿਰਤੀਆਂ, ਨਿਊ ਬੁਕ ਕੰਪਨੀ, ਜਲੰਧਰ।
3. ਇੰਦਰਪ੍ਰੀਤ ਸਿੰਘ ਧਾਮੀ, ਪੰਜਾਬੀ ਰੇਖਾ ਚਿਤਰ : ਰੂਪ ਤੇ ਪ੍ਰਕਾਰਜ, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
4. ਬਲਬੀਰ ਸਿੰਘ ਦਿਲ, ਪੰਜਾਬੀ ਨਿਬੰਧ : ਸਰੂਪ, ਸਿਧਾਂਤ ਅਤੇ ਵਿਕਾਸ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
5. ਹਰਕੀਰਤ ਸਿੰਘ ਤੇ ਗਿਆਨੀ ਲਾਲ ਸਿੰਘ, ਕਾਲਜ ਪੰਜਾਬੀ ਵਿਆਕਰਨ, ਪੰਜਾਬ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ।
6. ਡਾ. ਅਮਰ ਕੋਮਲ (ਸੰਪਾ.), ਚੋਣਵੇਂ ਪੰਜਾਬੀ ਨਿਬੰਧ (ਭੂਮਿਕਾ), ਨੈਸ਼ਨਲ ਬੁਕ ਟਰਸਟ, ਇੰਡੀਆ।
7. ਅਬਨਾਸ਼ ਕੌਰ, ਪੰਜਾਬੀ ਰੇਖਾ ਚਿਤਰ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
8. ਮਿੰਨੀ ਸਲਵਾਨ, ਪੰਜਾਬੀ ਵਿਆਕਰਨ : ਮੁਢਲੇ ਸੰਕਲਪ, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
9. ਬੂਟਾ ਸਿੰਘ ਬਰਾੜ, ਪੰਜਾਬੀ ਵਿਆਕਰਨ : ਸਿਧਾਂਤ ਤੇ ਵਿਹਾਰ, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ।

SEMESTER - II
PAPER- 112: ਮੁੱਢਲੀ ਪੰਜਾਬੀ
(In lieu of Compulsory Punjabi)
(For those students who are not domicile of Punjab)

ਸਮਾਂ: 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 50

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿੱਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ-ਕ੍ਰਮ
ਸੈਕਸ਼ਨ-ਏ

ਪੰਜਾਬੀ ਸ਼ਬਦ ਬਣਤਰ : ਧਾਤੂ, ਵਧੇਤਰ (ਅਗੇਤਰ, ਮਧੇਤਰ, ਪਿਛੇਤਰ), ਪੰਜਾਬੀ ਕੋਸ਼ਗਤ ਸ਼ਬਦ ਅਤੇ ਵਿਆਕਰਣਿਕ ਸ਼ਬਦ

ਸੈਕਸ਼ਨ-ਬੀ

- (ੳ) ਸੰਯੁਕਤ ਸ਼ਬਦ, ਸਮਾਸੀ ਸ਼ਬਦ, ਦੋਜਾਤੀ ਸ਼ਬਦ, ਦੋਹਰੇ/ਦੁਹਰਕਤੀ ਸ਼ਬਦ ਅਤੇ ਮਿਸ਼ਰਤ ਸ਼ਬਦ
(ਅ) ਸਿਖਲਾਈ ਤੇ ਅਭਿਆਸ

ਸੈਕਸ਼ਨ-ਸੀ

ਇਕ-ਵਚਨ, ਬਹੁ-ਵਚਨ, ਲਿੰਗ-ਪੁਲਿੰਗ, ਬਹੁ-ਅਰਥਕ ਸ਼ਬਦ, ਸਮਾਨ-ਅਰਥਕ ਸ਼ਬਦ, ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਲਈ ਇਕ ਸ਼ਬਦ, ਸ਼ਬਦ ਜੋੜ, ਵਿਰੋਧਆਰਥਕ ਸ਼ਬਦ।

ਸੈਕਸ਼ਨ-ਡੀ

ਨਿਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ : ਖਾਣ-ਪੀਣ, ਸਾਕਾਦਾਰੀ, ਰੁਤਾਂ, ਮਹੀਨਿਆਂ, ਗਿਣਤੀ, ਮੌਸਮ, ਮਾਰਕੀਟ/ਬਾਜ਼ਾਰ, ਵਪਾਰ, ਧੰਦਿਆਂ ਆਦਿ ਨਾਲ ਸੰਬੰਧਿਤ।

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਜੋਤੀ ਸ਼ਰਮਾ, **ਪੰਜਾਬੀ ਵਿਆਕਰਨ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਊਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
2. **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਬੋਧ**, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।
3. ਮਿੰਨੀ ਸਲਵਾਨ, **ਪੰਜਾਬੀ ਵਿਆਕਰਨ : ਮੁਢਲੇ ਸੰਕਲਪ**, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
4. ਰੰਜੂ ਬਾਲਾ, **ਅਰਥ ਵਿਗਿਆਨ**, ਆਰਸੀ ਪਬਲਿਸ਼ਰਜ਼, ਦਿਲੀ।

SEMESTER - II

PAPER- 112: Punjab History & Culture (C 320 to 1000 B.C.)
(Special Paper in lieu of Punjabi compulsory)
(For those students who are not domicile of Punjab)

Time: 3 Hours**Max. Marks :50****Instructions for the Paper Setters**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION- A

1. Alexander's Invasion and its Impact
2. Punjab under Chandragupta Maurya and Ashoka.

SECTION- B

3. The Kushans and their Contribution to the Punjab.
4. The Panjab under the Gupta Empire.

SECTION- C

5. The Punjab under the Vardhana Emperors
6. Socio-cultural History of Punjab from 7th to 1000 A.D.

SECTION- D

7. Development of languages and Education with Special reference to Taxila
8. Development of Art & Architecture

Suggested Readings

1. L. M Joshi (ed), *History and Culture of the Punjab*, Art-I, Punjabi University, Patiala, 1989 (3rd edition)
2. L.M. Joshi and Fauja Singh (ed.), *History of Punjab* , Vol.I, Punjabi University, Patiala, 1977.
3. Budha Parkash, *Glimpses of Ancient Punjab*, Patiala, 1983.
4. B.N. Sharma: *Life in Northern India*, Delhi. 1966.

PAPER–VII DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION
(Compulsory For All UG Classes in College)

Time: 3 Hours

Max. Marks: 100

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section – A

Meaning of Drug Abuse:

- 1) Meaning, Nature and Extent of Drug Abuse in India and Punjab.
- 2) Consequences of Drug Abuse for:
 - Individual : Education, Employment, Income.
 - Family : Violence.
 - Society : Crime.
 - Nation : Law and Order problem.

Section – B

Management of Drug Abuse:

- (i) Medical Management: Medication for treatment and to reduce withdrawal effects.
- (ii) Psychiatric Management: Counselling, Behavioural and Cognitive therapy.
- (iii) Social Management: Family, Group therapy and Environmental Intervention.

Section – C

Prevention of Drug abuse:

- (i) Role of family: Parent child relationship, Family support, Supervision, Shaping values, Active Scrutiny.
- (ii) School: Counselling, Teacher as role-model. Parent-teacher-Health Professional Coordination, Random testing on students.

Section – D

Controlling Drug Abuse:

- (i) Media: Restraint on advertisements of drugs, advertisements on bad effects of drugs, Publicity and media, Campaigns against drug abuse, Educational and awareness program
- (ii) Legislation: NDPs act, Statutory warnings, Policing of Borders, Checking Supply/Smuggling of Drugs, Strict enforcement of laws, Time bound trials.

References:

1. Ahuja, Ram (2003), *Social Problems in India*, Rawat Publication, Jaipur.
2. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004.
3. Inciardi, J.A. 1981. *The Drug Crime Connection*. Beverly Hills: Sage Publications.
4. Kapoor. T. (1985) *Drug epidemic among Indian Youth*, New Delhi: Mittal Pub.
5. Kessel, Neil and Henry Walton. 1982, *Alcoholism*. Harmond Worth: Penguin Books.
6. Modi, Ishwar and Modi, Shalini (1997) *Drugs: Addiction and Prevention*, Jaipur: Rawat Publication.
7. National Household Survey of Alcohol and Drug abuse. (2003) New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.
8. Ross Coomber and Others. 2013, *Key Concept in Drugs and Society*. New Delhi: Sage Publications.
9. Sain, Bhim 1991, *Drug Addiction Alcoholism, Smoking obscenity* New Delhi: Mittal Publications.
10. Sandhu, Ranvinder Singh, 2009, *Drug Addiction in Punjab: A Sociological Study*. Amritsar: Guru Nanak Dev University.
11. Singh, Chandra Paul 2000. *Alcohol and Dependence among Industrial Workers*: Delhi: Shipra.
12. Sussman, S and Ames, S.L. (2008). *Drug Abuse: Concepts, Prevention and Cessation*, Cambridge University Press.
13. Verma, P.S. 2017, “*Punjab’s Drug Problem: Contours and Characteristics*”, Economic and Political Weekly, Vol. LII, No. 3, P.P. 40-43.
14. World Drug Report 2016, United Nations office of Drug and Crime.
15. World Drug Report 2017, United Nations office of Drug and Crime.

SEMESTER–III
Paper 301 : JAVA SCRIPT -II

Time: 03.00 Hours each

Max. Marks: 50 (Theory)

Max. Marks: 50 (Practical)

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Working with String in JavaScript, Working with Date in JavaScript, Working with Number in JavaScript, Working with Boolean in JavaScript, Role of Math Methods in JavaScript,

Working with RegExp in JavaScript: Brackets , Quantifiers, Literal Characters, Metacharacters, constructor.

SECTION–B

Arrays in JavaScript: Introduction to arrays, Array Properties , Constructor, length, Prototype , Array Methods [concat () ,every () ,filter () ,forEach () ,join () ,lastIndexOf () , map () ,pop () ,push () , reduce () , reverse () , shift () , slice () , some () , sort () , splice () , toString () , unshift ()]

SECTION–C

Cookies: Introduction to cookies, Storing Cookies, Reading Cookies, Setting Cookies Expiry Date, Deleting a Cookie.

SECTION–D

Objects : Introduction to objects, Object Properties, Object Methods ,User-Defined Objects , Defining Methods for an Object ,The ‘with’ Keyword

Usage of DOM structure in JavaScript

Handling Errors and Exceptions in JavaScript

Form Validation

Animation: Manual Animation. Automated Animation. Rollover with a Mouse Event

Multimedia: Checking for Plug-Ins, Controlling Multimedia.

Debugging in JavaScript

References:

1. Learn Advanced Java Script Programming by Tomer Shiran and Yehuda Shiran
2. JavaScript: The Complete Reference1 by Thomas Powell and Fritz Schneider

SEMESTER-III

PAPER-301: LAB – JAVASCRIPT

Time: 3 Hrs.

Max. Marks: 50

Practical Based on lab on JavaScript

SEMESTER-III
PAPER- 302: OPERATING SYSTEM

Time: 03.00 Hours Each

Max. Marks: 50 (Theory)

Max. Marks: 50 (Practical)

Instructions for the Paper Setters: -

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Introduction: Definition, Early Systems, Simple Batch system, Multi programmed Batch. Time Sharing Systems, Personal Computer System, Parallel Systems, Distributed Systems, Real-time Systems.

Processes: Process concepts, Process Scheduling, threads.

SECTION-B

CPU-Scheduling: Basic concepts, scheduling criteria, scheduling algorithms, algorithm evaluation.

Process Synchronization: Background critical – section problem, semaphores, classical problem of synchronization.

SECTION-C

Memory Management: Background, Logical v/s Physical address space, mapping, continuous allocation, paging, segmentation.

Virtual Memory: Background, demand paging, performance of demand paging, page replacement, page replacement algorithms, allocation of frames, thrashing.

Secondary Storage Structures: Disk structures, Disk scheduling, Disk Reliability.

SECTION-D

Deadlocks: System Model, Deadlock characterization, methods for handing deadlocks, Deadlocks Prevention, Deadlock avoidance, Deadlock detection, Recovery from deadlock, combined approach to deadlock handling.

Open source operating systems: LINUX: Introduction, General Overview, Kernel Mode and user mode, Process, Advanced Concepts, Scheduling, Personalities, Cloning, Signals, Development with Linux.

References:

1. “Operating System Concepts”, Fourth edition by Silberschatz Galvin Addison Wesley.
2. “Operating Systems: A Design Oriented Approach” by Crowley, Published by Tata McGraw Hill.
3. “Operating Systems” Second edition by Dietel, Addison Wesley.

SEMESTER-III

PAPER-302: LAB -OPERATING SYSTEM (LINUX)

Time: 3 Hrs.

Max. Marks: 50

Practical Based on lab on Shell command on DOS and Linux.

SEMESTER-III
PAPER -303: JAVA PROGRAMMING
(PRACTICAL)

Time: 03.00 Hours each

Max. Marks: 100

Instructions for the Paper Setters: -

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section. The student can use only Non-programmable & Non-storage type calculator.

SECTION-A

Introduction: Concept of Java Virtual Machine and Byte code, Basic Data types, Type Conversion and Casting,

Operators and Control Structures: Arithmetic, Bitwise, Relational, Boolean, Assignment Operators, Operator precedence, Selection Statements, Iteration Statements, Jump statements. Function in java, One Dimensional and Multidimensional arrays.

SECTION-B

Object Oriented concepts in java, Declaring objects, introducing methods, constructors, this keyword, Overloading constructors, Recursion, Nested and Inner classes.

Inheritance: Basics, Creating Multilevel hierarchy, Method Overriding, Abstract Classes.

SECTION-C

Packages and Interface: Packages, Access Protection, Importing Packages, Interfaces, Defining, Implementing, Applying Interfaces, Extending Interfaces.

Exception Handling: Fundamentals, Exception Types, uncaught exceptions, try and catch.

SECTION-D

Swings: Window Fundamentals, Working with Frame Windows, panels, checkbox, radio button, textbox, combo box, list box etc. swing controls.

References:

1. Programming with Java by Balagurusamy
2. Java: The Complete Reference, Seventh Edition by Herbert Schildt

SEMESTER-III
PAPER -304: WORDPRESS
(PRACTICAL)

Time: 03.00 Hours each

Max. Marks: 100

- Introduction to Wordpress
- Creating posts and pages
- Formatting text
- Publishing and scheduling posts
- Adding images, audio, and video
- Managing content
- Customizing Appearance
- Using widgets
- Working with plug-ins
- Editing users profiles
- Configuring settings
- Interacting with readers
- Security and maintenance
- Using Google Blogger

Assignments: Create a website using Wordpress.

SEMESTER-IV
PAPER-401: DATABASE SYSTEM

Time: 03.00 Hours each

Max. Marks: 50 (Theory)

Max. Marks: 50 (Practical)

Instructions for the Paper Setters: -

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section. The student can use only Non-programmable & Non-storage type calculator.

SECTION-A

Basic Concepts: Database, Database system, Database management system, Data independence, advantages and disadvantages, 3 level architecture and mapping DBMS vs. File System, DBA's Role, RDBMS.

Data Models: Relational model, Hierarchical model, Network model, comparison of these model, An overview of the E/R Model, E/R diagrams, Database design with the E/R model.

SECTION-B

Normalization: Introduction to Normalization, Need of Normalization, various forms of Normalization (1NF, 2NF, 3NF, BCNF)

SQL: Introduction, Data Definition Language (DDL), Data Manipulation Language (DML), Data Control Language (DCL) statements, Views, Sub-queries, Access Rights.

SECTION-C

Transaction Management and Concurrency Control: Introduction to Transaction Processing, Properties of Transactions, Concurrency Control, purpose of concurrency control, Techniques for concurrency control.

SECTION-D

Database Recovery of database: Introduction, Need for Recovery, Recovery Techniques.

Database Security: Introduction, Threats, Counter Measures.

References:

1. C.J. Date: "An Introduction of Database System", The Systems Programming Series, 6/Ed, Addison-Wesley Publishing Company, Inc., 1995.
2. Silberschatz, Korth & Sudarshan, "Database System Concepts", Third Ed., McGraw Hill International Editions, Computer Science Series-1997.
3. Parteek Bhatia and Gurvinder Singh, "Simplified Approach to DBMS", Kalyani Publishers, 2010.
4. Ivan Bayross, "SQL/PLSQL: The Programming Language of Oracle, 3rd Revised Edition, 2006.

SEMESTER-IV

PAPER-401: LAB- SQL AND PL/SQL

Time: 3 Hrs.

Max. Marks: 50

Practical Lab Based on SQL and PL/SQL

SEMESTER-IV
PAPER- 402: SOFTWARE ENGINEERING
(THEORY)

Time: 3 Hrs.

Max. Marks: 100

Instructions for the Paper Setters: -

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section. The student can use only Non-programmable & Non-storage type calculator.

SECTION-A

Introduction to Software Engineering: Definition, Software characteristics, Software components, Software crisis, Software Applications, Software Engineering Paradigms, Software Development Life Cycle.

Software Project Management: Introduction, Project planning, metrics for project size estimation, project estimation techniques, Cost estimation, COCOMO model, Project scheduling and milestones.

SECTION-B

Software Requirement Specification (SRS): Definition, Problem analysis, structuring information, Data flow diagram and data dictionary, structured analysis, Characteristics and component of (SRS), Metrics of SRS.

SECTION-C

Software Design and Coding: Introduction, classification of design activities and design Methodologies, Cohesion and Coupling, Verification and validation, approaches to software design, introduction to various design approaches, Structured programming, Coding standards and guidelines.

SECTION-D

Software Testing and Metrics: Software Testing, levels of testing, Test case design, Design metrics, Coding metrics, Technical metrics, testing metrics.

Software Maintenance: Definition need and types of Software maintenance.

Trends in Software Engineering: Reverse Engineering, Re-engineering, CASE Tools.

References:

1. Pressman: Software Engineering: A Practitioner's Approach, 3rd Ed., TMH 2004
2. Flecher and Hunt: Software Engineering and CASE: Bridging and Culture G
3. An Integrated Approach to Software Engineering, Second Edition, Pankaj Jalote
4. Fundamentals of Software Engineering, Rajib Mall.

SEMESTER-IV
PAPER-403: PHP-II
(PRACTICAL)

Time: 03.00 Hours each

Max. Marks: 100

Array: Anatomy of an Array, Creating index based and Associative array, Accessing array Element, looping with Index based array, Looping with associative array using each() and for each()

PHP FUNCTIONS: Defining functions, Using variables in functions, Passing values to a function, Nesting of Functions, Anonymous Functions, Recursion, Returning a value from a function, Using built-in functions, Defining User functions, Passing parameter(Call By Value & Call By Reference) & return value, Trends of PHP Functions(Missing Parameter, Formal parameter declaration), Importing content of one page into another

Database Connectivity with Database: Connection with Database, Performing basic database operation (DML) (Insert, Delete, Update, Select), Setting query parameter, Executing query Join (Cross joins, Inner joins, Outer Joins, Self joins.)

Object Oriented Concepts in PHP

CREATING WEB FEATURES: Redirecting users to other pages, Creating an Email, Sending an Email, Configuring Email, File Uploading and File Downloading

ERROR & EXCEPTION HANDLING

Concept of Exception handling, Using Try/catch/throw, Checked & Unchecked Exception
Creating Custom exception

Practical based on above syllabus.

Final assignments

Website Design with PHP

SEMESTER-IV**PAPER- 404: ADOBE FLASH****(PRACTICAL)****Time: 3 Hrs.****Max. Marks: 100****Flash workspace**

- Understanding tools
- Drawing basic shapes
- Masking content
- Organizing a file into layers
- Importing content into the Library
- Understanding symbols and instances
- Use Graphic, Button and Movie clip
- Inserting frames and key frames in the Timeline
- Understanding Tweens
- Animating with Motion and Shape Tweens
- Creating animations
- Using Action Script code snippets to control video playback
- Publishing HTML, SWF, and AIR files from Flash

Practical based on above syllabus.

Final assignments

Web Banner and Animated web buttons

SEMESTER-IV**ESL-221 : Environmental Studies (Compulsory Paper)****Time: 3 Hrs.****Max. Marks: 100****Teaching Methodologies**

The Core Module Syllabus for Environmental Studies includes class room teaching and field work. The syllabus is divided into 8 Units [Unit-1 to Unit-VII] covering 45 lectures + 5 hours for field work [Unit-VIII]. The first 7 Units will cover 45 lectures which are class room based to enhance knowledge skills and attitude to environment. Unit-VIII comprises of 5 hours field work to be submitted by each candidate to the Teacher in-charge for evaluation latest by 15 December, 2020.

Exam Pattern: **End Semester Examination- 75 marks**
 Project Report/Field Study- 25 marks [based on submitted report]
 Total Marks- 100

The structure of the question paper being:

Part-A, Short answer pattern with inbuilt choice – 25 marks

Attempt any five questions out of seven distributed equally from Unit-1 to Unit-VII. Each question carries 5 marks. Answer to each question should not exceed 2 pages.

Part-B, Essay type with inbuilt choice – 50 marks

Attempt any five questions out of eight distributed equally from Unit-1 to Unit-VII. Each question carries 10 marks. Answer to each question should not exceed 5 pages.

Project Report / Internal Assessment:**Part-C, Field work – 25 marks [Field work equal to 5 lecture hours]**

The candidate will submit a hand written field work report showing photographs, sketches, observations, perspective of any topic related to Environment or Ecosystem. The exhaustive list for project report/area of study are given just for reference:

1. Visit to a local area to document environmental assets: River / Forest/ Grassland / Hill / Mountain / Water body / Pond / Lake / Solid Waste Disposal / Water Treatment Plant / Wastewater Treatment Facility etc.
2. Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
3. Study of common plants, insects, birds
4. Study of tree in your areas with their botanical names and soil types
5. Study of birds and their nesting habits
6. Study of local pond in terms of wastewater inflow and water quality
7. Study of industrial units in your area. Name of industry, type of industry, Size (Large, Medium or small scale)
8. Study of common disease in the village and basic data from community health centre
9. Adopt any five young plants and photograph its growth
10. Analyze the Total dissolved solids of ground water samples in your area.
11. Study of Particulate Matter (PM_{2.5} or PM₁₀) data from Sameer website. Download from Play store.

12. Perspective on any field on Environmental Studies with secondary data taken from Central Pollution Control Board, State Pollution Control Board, State Science & Technology Council etc.

Unit-I

The multidisciplinary nature of environmental studies

Definition, scope and importance, Need for public awareness

(2 lectures)

Unit-II

Natural Resources: Renewable and non-renewable resources:

Natural resources and associated problems.

- (a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
- (b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
- (c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
- (d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
- (e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
- (f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
 - Role of an individual in conservation of natural resources.
 - Equitable use of resources for sustainable lifestyles.

(8 Lectures)

Unit-III

Ecosystems

- Concept of an ecosystem
- Structure and function of an ecosystem
- Producers, consumers and decomposers
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids
- Introduction, types, characteristic features, structure and function of the following ecosystem: Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, ocean estuaries)

(6 Lectures)

Unit-IV

Biodiversity and its conservation

- Introduction – Definition: genetic, species and ecosystem diversity
- Biogeographical classification of India
- Value of biodiversity: consumptive use, productive use, social, ethical aesthetic and option values
- Biodiversity at global, national and local levels
- India as a mega-diversity nation
- Hot-spots of biodiversity
- Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts

- Endangered and endemic species of India
- Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity

(8 Lectures)

Unit-V

Environmental Pollution

Definition

- Causes, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear pollution
- Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution
- Pollution case studies
- Disaster management: floods, earthquake, cyclone and landslides

(8 Lectures)

Unit-VI

Social Issues and the Environment

- From unsustainable to sustainable development
- Urban problems and related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people; its problems and concerns. Case studies.
- Environmental ethics: Issues and possible solutions
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland reclamation
- Consumerism and waste products
- Environmental Protection Act, 1986
- Air (Prevention and Control of Pollution) Act, 1981
- Water (Prevention and control of Pollution) Act, 1974
- Wildlife Protection Act
- Forest Conservation Act
- Issues involved in enforcement of environmental legislation
- Public awareness

(7 Lectures)

Unit-VII

Human Population and the Environment

- Population growth, variation among nations
- Population explosion – Family Welfare Programmes
- Environment and human health
- Human Rights
- Value Education
- HIV / AIDS
- Women and Child Welfare
- Role of Information Technology in Environment and Human Health
- Case Studies

(6 Lectures)

Unit-VIII

Field Work

- Visit to a local area to document environmental assets
river/forest/grassland/hill/mountain
- Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
- Study of common plants, insects, birds
- Study of simple ecosystems-pond, river, hill slopes, etc

(Field work equal to 5 lecture hours)

ADVISORY FOR PUSHPA GUJRAL SCIENCE CITY, KAPURTHALA:

The Under Graduate students studying Environmental Studies (Compulsory Paper for All UG College Courses) may be taken to Pushpa Gujral Science City, Kapurthala in lieu of Field study report of 25 marks.

Although students will submit a hand written reports with pictures/ graphs/ tables related to biodiversity, ecology, health, biotechnology, energy, water etc. in about 10 pages to the teacher in-charge.

Above advisory is issued to promote scientific temperament in undergraduate classes and is optional. Further, the report will only be considered if there will be a minimum strength of 25 students along with deputed teacher by the college.

References:

1. Bharucha, E. 2005. Textbook of Environmental Studies, Universities Press, Hyderabad.
2. Down to Earth, Centre for Science and Environment, New Delhi.
3. Heywood, V.H. & Waston, R.T. 1995. Global Biodiversity Assessment, Cambridge House, Delhi.
4. Joseph, K. & Nagendran, R. 2004. Essentials of Environmental Studies, Pearson Education (Singapore) Pte. Ltd., Delhi.
5. Kaushik, A. & Kaushik, C.P. 2004. Perspective in Environmental Studies, New Age International (P) Ltd, New Delhi.
6. Rajagopalan, R. 2011. Environmental Studies from Crisis to Cure. Oxford University Press, New Delhi.
7. Sharma, J. P., Sharma. N.K. & Yadav, N.S. 2005. Comprehensive Environmental Studies, Laxmi Publications, New Delhi.
8. Sharma, P. D. 2009. Ecology and Environment, Rastogi Publications, Meerut.
9. State of India's Environment 2018 by Centre for Sciences and Environment, New Delhi
10. Subramanian, V. 2002. A Text Book in Environmental Sciences, Narosa Publishing House, New Delhi.

SEMESTER-V
PAPER-501: SOFTWARE RE-ENGINEERING
(THEORY)

Time: 3 Hrs.

Max. Marks: 50

Instructions for the Paper Setters: -

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section. The student can use only Non-programmable & Non-storage type calculator.

SECTION-A

Introduction to Software Re-engineering: Software Reengineering and its importance, goals of re-engineering, Software reengineering process model, software reengineering tools and Business process reengineering: Business processes, A BPR Model.

SECTION-B

Legacy Software Structure: Legacy software structure and distribution: Layered distribution model, Legacy software distribution, Architectural problems.

Reverse Engineering: Need of reverse engineering, Reverse engineering process, Reverse engineering to understand data, Reverse engineering user interfaces, Tools for reverse engineering.

Restructuring: Code restructuring: Characteristics of unstructured code, Characteristics of structured code, Restructuring problems, Data restructuring (Data reengineering): Data reengineering process, Data problems, Approaches: Data cleanup, Data extension, Data migration, Need for Data migration, data migration process, Tools for restructuring.

SECTION-C

Refactoring: Introduction to re-factoring, Principles of re-factoring, Need for re-factoring, Problems with refactoring, Refactoring and design, Re-factoring and performance. Different re-factoring techniques and their use, refactoring tools.

SECTION-D

Forward Engineering: Introduction to forward engineering, Goals of forward engineering, Forward engineering for client/server applications, Tools for forward engineering, forward engineering v/s reverse engineering

Software Reuse: Software Reuse Success Factors, Reuse Driven Software Engineering in a Business, Use case Components, Object Components, Layered Architecture.

Recommended Books:

1. Software Engineering, Ian Sommerville, Addison-Wesley, 6th Edition.
2. Software Engineering, A Practitioner's Approach, Roger S. Pressman, 6th Edition.
3. Software Reuse: Architecture, Process and Organization for Business Success, Ivar Jacobson, Martin Griss, Patrik Jonsson, Pearson Education, 2000

SEMESTER-V

**PAPER-502: SOFTWARE PROJECT MANAGEMENT AND BUSINESS SOLUTIONS
(THEORY)**

Time: 3 Hrs.

Max. Marks: 50

Instructions for the Paper Setters: -

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section. The student can use only Non-programmable & Non-storage type calculator.

SECTION-A

Introduction to Software Project Management: Project Definition, Contract Management, Activities covered By Software Project Management, Overview of Project Planning, Stepwise Project Planning.

SECTION-B

Project Evaluation: Strategic Assessment, Technical Assessment, Cost Benefit Analysis, Cash Flow Forecasting, Cost Benefit Evaluation Techniques, Risk Evaluation.

SECTION-C

Activity Planning Objectives, Project Schedule, Sequencing and Scheduling Activities, Network Planning Models – Forward Pass, Backward Pass, Activity Float, Shortening Project Duration, Activity on Arrow Networks, Risk Management, Nature Of Risk, Types Of Risk, Managing Risk, Hazard Identification, Hazard Analysis, Risk Planning And Control.

Monitoring

and Control Creating Framework, Collecting The Data, Visualizing Progress, Cost Monitoring, Earned Value, Prioritizing Monitoring, Getting Project Back To Target, Change Control, Managing Contracts, Introduction, Types Of Contract, Stages In Contract Placement, Typical Terms Of A Contract, Contract Management, Acceptance.

SECTION-D

Managing People and Organizing Teams Introduction, Understanding Behavior, Organizational Behaviour: A Background, Selecting The Right Person For The Job, Instruction In The Best Methods, Motivation, The Oldham, Hackman Job Characteristics Model, Working In Groups, Becoming A Team, Decision Making, Leadership, Organizational Structures , Stress, Health And Safety, Case Studies.

Business Solutions Information system in Global Business: How Businesses use Information system, ethical and Social Issues in IS, DSS: Enhancing Decision making, Business Intelligence tools, E-commerce: types, web based business, ERP, EDI.

Recommend Books

1. Bob Hughes, Mike Cotterell, "Software Project Management", Third Edition, Tata McGraw Hill, 2004.
2. Ramesh, Gopaldaswamy, "Managing Global Projects", Tata McGraw Hill, 2001.
3. Royce, "Software Project Management", Pearson Education, 1999.
4. Jalote, "Software Project Management in Practice", Pearson Education, 2002.

SEMESTER-V**PAPER 503: ASP.NET WITH C#****(PRACTICAL)****Time: 03.00 Hours****Max. Marks: 100****Basics concepts of .NET framework**

C# Basics: Data types, control Structure, Operators, Arrays, Functions and OOPs Concept, Classes and Objects, Inheritance, Polymorphism, Abstraction and Encapsulation.

Introduction to Standard Controls in .NET: Display information, Accepting user input, Submitting form data, Displaying images, Using the panel control, Using the hyperlink control.

Introduction to Validation Controls: Using the required field validator 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.

Introduction to Rich Controls: Accepting file uploads, Displaying a calendar, Displaying advertisement, Displaying different page views, Displaying a wizard.

Designing Website with Master Pages: Creating master pages, Modifying master page content, Loading master page dynamically.

List Controls: Dropdown list control, Radio button list controls, list box controls, 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.

Database Connectivity with MS SQL Server and ODBC**Reference Book:**

ASP.NET 3.5: Stephen Walther, Pearson Education.

SEMESTER-V**PAPER-504: SOFTWARE TESTING & QUALITY ASSURANCE
(THEORY)****Time: 3 Hrs.****Max. Marks: 50****Instructions for the Paper Setters: -**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section. The student can use only Non-programmable & Non-storage type calculator.

SECTION-A

Introduction: Overview of Software Engineering, Software Process, Process Models, Overview of Project Management Process and its Phases.

Software Quality Assurance Concepts and Standards: Quality Concepts, Quality Control, Quality Assurance, SQA Activities, Software Reviews, Formal Technical Reviews, Review Guidelines, Software Reliability, Software Safety, Quality Assurance Standards, ISO 9000, ISO 9001:2000, ISO 9126 Quality Factors, CMM, TQM, Six Sigma, SPICE, Software Quality Assurance Metrics.

SECTION-B

Software Testing and Techniques: Introduction and Testing Types, Verification and Validation, Test Strategies for Conventional and Object Oriented Software, Metrics for Testing, Debugging Process, Debugging Strategies, Different Testing Techniques: Black Box and White Box Testing, Basis Path Testing, Graph Matrices, Graph Based Testing Methods.

SECTION-C

Object Oriented Testing Methods: Applicability of Conventional Test Case Design Methods, Issues in Object Oriented Testing, Fault-Based Testing, Scenario-Based Testing, Random Testing and Partition Testing for Classes, Interclass Test Case Design.

SECTION-D

Testing Process and Specialized Systems Testing: Test Plan Development, Requirement Phase, Design Phase and Program Phase Testing, Testing Client/Server Systems, Testing Web based Systems, Testing Off the-Shelf Software, Testing in Multiplatform Environment, Testing for Real Time Systems, Testing Security.

References:

1. Ian Sommerville, Software Engineering, Seventh Edition, Pearson Education.
2. R.S. Pressman, Software Engineering: A Practitioner's Approach, Sixth Edition, Tata McGraw-Hill.
3. William E. Perry, Effective Methods for Software Testing, Second Edition, John Wiley & Sons.
4. Paul C. Jorgensen, Software Testing: A Craftsman's Approach, Third Edition, Auerbach Publications, Taylor and Francis Group, 2010.
5. Yogesh Singh, Software Testing, Cambridge University Press.

SEMESTER-V

PAPER-505: LAB -SOFTWARE TESTING (CASE TOOLS)

Time: 3 Hrs.

Max. Marks: 50

Practical Lab Based on Software Testing (Case Tools)

SEMESTER-V

PAPER-506: ADOBE MUSE

(PRACTICAL)

Time: 3 Hrs.

Max. Marks: 100

Introduction to Adobe Muse

Working with Pages

Working with Panels

Understanding Plan, Design & Preview modes.

Working with Graphics

Creating and Formatting Objects

Working with Text

Working with Colors

Working with Hyperlinks

Creating Menus in MUSE

Working with Widgets

Working with video embeds

Working with Parallax Scroll

Understanding Publishing

Practical based on above syllabus.

SEMESTER-VI

PAPER-601: - MAJOR PROJECT

M. Marks: 400

General Instructions:

Report based on Industrial Training and project shall be submitted to the College/Institute.

The evaluation of the work shall be done by the following panel of examiners prior to the theory examination:

- a) Internal Examiner
- b) Head/ Head Nominee of coordinating department of the college for this UGC scheme
- c) External Examiner (to be appointed by the University)