B.Sc. (Information Technology)
Semester-I

S N	Course Code	Course Name	Distribution of The Marks				Lectures Per week			Credit Distribution			Total Credit L+T+ P	Page No.
			Theory	Internal Assessment	Practical	Total	L	T	P	L	T	P		
Discipline Specific Course (DSC)														
1	BIT-111	Fundamentals of Computers	75	25	-	100	5	1	0	3	1	0	4	2-3
2	BIT-112	Introduction to Programming-C	75	25	-	100	5	1	0	3	1	0	4	4-5
3	BIT-113	Applied & Discrete Mathematics	75	25	-	100	5	1	0	3	1	0	4	6-7
4	BIT-114P	Lab-I: PC Computing	-	13	37	50	0	0	6	0	0	2	2	14-15
5	BIT-115P	Lab-II: C - Language	-	13	37	50	0	0	6	0	0	2	2	16-17
Ability Enhancement Course (AEC)														
6	BCSE-1122	Communication Skills in English	60	25	15	100	4	0	2	3	0	1	4	8-9
7	BHPB-1101/ BPBI-1102/BPHC-1104	Punjabi/ Basic Punjabi (Mudhli Punjabi) (Compulsory)/ Punjab History & Culture	75	25	-	100	6	0	0	4	0	0	4	10-13
Skill Enhancement Course(SEC)														
8	SEC-112	Fundamentals of Commerce	37	13	-	50	3	0	0	2	0	0	2	18
Value Added Course(VAC)														
9	ZDA111	*Drug Abuse: Problem, Management and Prevention(Compulsory paper)	-	-	-	25	2	0	0	1	0	0	1	19-20
										Total Credits=27				

Note: *This paper marks will not be included in the total marks.

B.Sc. (Information Technology) Semester – I
BIT-111: Fundamentals of Computers
Discipline Specific Course (DSC)

Time: 3 Hrs. **Total Marks: 100**

Credits		
L	**T**	**P**
3	**1**	**0**

Theory Marks: 75

Theory Internal Assessment Marks:25

Note for paper setter and students:

1. **Medium of Examination is English Language.**
2. **There will be five sections.**
3. **Section A is compulsory and will be of 15 marks consisting of 8 short answer type questions carrying 2.5 mark each covering the whole syllabus. The answer should not exceed 50 words. The students will have to attempt any 6 questions in this section.**
4. **Sections B, C, D and E will be set from units I, II, III & IV respectively and will consist of two questions of 15 marks each from the respective unit. The students are required to attempt one question from each of these sections.**

Course Objectives:

1.	To each the fundamentals so students can efficiently use MS Word
2.	Provide a knowledge base for Computer Fundamentals & MS Word upon which you can build.
3.	On such computer literacy that prepares students for life-long learning of computer concepts and skills, Students It focuses discovers why computers are essential components in education, business and society in this course**.**
4.	Use real-world examples and procedures that will prepare you to be a skilled user of Computer & MS Word, MS Power Point & MS Excel.

UNIT-I

1. Introduction to Computer:
Computer System Characteristics, Hardware - CPU, Memory, Input, Output & Storage devices, Organization of Secondary Storage Media**,** Software - System & Application, Types of processing: Batch and On-line.

UNIT -II

2. MS Word 2010:

Overview, creating, saving, opening, importing, exporting and inserting files, formatting pages, paragraphs and sections, indents and outdents, creating lists and numbering. Headings, styles, fonts and font size. Editing, positioning and viewing texts, Finding and replacing text, inserting page breaks, page numbers, book marks, symbols and dates. Using tabs and tables, header, footer and printing. Headers and Footers, Mail merge, macros, tables.

UNIT-III

3. MS – Excel 2010:

Create, open and view a workbook, Save and Print Workbooks, Enter and Edit data, Modify a worksheet and a Workbook, Work with a Cell References, Learn to use functions and formulas, Create and Edit charts and graphics, Filter and Sort Table Data, Work with Pivot Tables and Charts, Import and Export Data.

UNIT -IV

4. MS – PowerPoint 2010:

Introduction to MS Power Point, Power Point Elements, Exploring Power Point Menu, Working with Dialog Boxes, Saving Presentation, Printing Slides, Slide View, Slide Sorter view, notes view, outline view, Formatting and enhancing text formatting.

References:

1. R.K. Taxali : Introduction to Software Packages, Galgotia Publicaions.
2. MS–Office , Compiled by SYBIX.
3. MS–Office , BPB Publications(22 April 2018)
4. Introduction to Computer, P.K. Sinha.

Course Outcomes:

At the end of this course student will be able to:

CO-1.	Describe the usage of computers and why computers are essential components in business and society.
CO-2.	Solve common problems using appropriate Computer Fundamentals.
CO-3.	Identify categories of programs, system software and applications. Organize and work with files and folders.
CO-4.	Describe the important computer system resources and the role of operating system in their management policies and algorithms.
CO-5.	Learn basic word processing, spread sheet and presentation graphics software skills.

B.Sc. (Information Technology) Semester – I
BIT-112: Introduction to Programming – C
Discipline Specific Course (DSC)

Time: 3 Hrs. **Total Marks: 100**

Credits		
L	**T**	**P**
3	**1**	**0**

Theory Marks: 75

Theory Internal Assessment Marks:25

Note for paper setter and students:

1. **Medium of Examination is English Language.**
2. **There will be five sections.**
3. **Section A is compulsory and will be of 15 marks consisting of 8 short answer type questions carrying 2.5 marks each covering the whole syllabus. The answer should not exceed 50 words. The students will have to attempt any 6 questions in this section.**
4. **Sections B, C, D and E will be set from units I, II, III & IV respectively and will consist of two questions of 15 marks each from the respective unit. The students are required to attempt one question from each of these sections.**

Course Objectives:

1.	The course is designed to provide complete knowledge of C language..
2.	The course enhances the capability of designing the programs using array, functions and pointers.
3.	To build small size applications.

UNIT –I

Introduction to c: Evolution and characteristics of C, Programdevelopment tools (Flowcharts, Algorithms), Structure of C Program, Different Errors in C program.
C-Fundamentals: Character set, Various Tokens, Data types, Data input and output statements.
Operators: Different operators in C and Hierarchy of Operators (Precedence and Associativity.
Control Statements: Decision making statements, Iterative/Looping statements, Transfer Statements.

UNIT -II

Program Structure Storage Class: Automatic, external and static variables, multiple programs, more about library functions.

Functions: Brief overview, defining, accessing functions, Library and User Defining Function , passing arguments to function, Recursion.

UNIT -III

Arrays and String: Defining, processing an array, passing arrays to a function, multi–dimensional arrays. String Declaration , Library String Handling Function.

Structure and Union : Defining Structure and Union Variables, Self Referential Structure , Comparison of Structure with Union.

UNIT -IV

Pointers: Understanding Pointers, pointer declaration and Initialization, operation on pointers ,passing pointer to a function, pointer and one-dimensional arrays.
File Handling: Opening and closing of files, different modes (Reading and writing).

References:

1. Let Us C By Yashwant Kanetkar,BPB Publication,14th Edition,2017.
2. The Complete Reference by Herbert Schildt, indian edition 4th edition ,2017
3. Shcaum Outline Series: "ProgrammingwithC",4th edition,2018

Course Outcomes:

At the end of this course student will be able to:

CO-1	Use the fundamentals of C programming in trivial problem solving.
CO-2	Enhance skill on problem solving by constructing algorithms.
CO-3	Identify solution to a problem and apply control structures and use defined functions for solving the problem.

B.Sc. (Information Technology) Semester – I
BIT-113: Applied & Discrete Mathematics
Discipline Specific Course (DSC)

Time: 3 Hrs. **Total Marks: 100**

Credits		
L	T	P
3	1	0

Theory Marks: 75

Theory Internal Assessment Marks:25

Note for paper setter and students:

1. **Medium of Examination is English Language.**
2. **There will be five sections.**
3. **Section A is compulsory and will be of 15 marks consisting of 8 short answer type questions carrying 2.5 mark each covering the whole syllabus. The answer should not exceed 50 words. The students will have to attempt any 6 questions in this section.**
4. **Sections B, C, D and E will be set from units I, II, III & IV respectively and will consist of two questions of 15 marks each from the respective unit. The students are required to attempt one question from each of these sections.**

Course Objectives:

1.	To understand sets and perform different operations on sets.
2.	To Identify functions and their properties.
3.	To enable the students how to think logically and mathematically.
4.	To have knowledge about mathematical concepts that are implemented in computer programming.
5.	To strengthen the ability of students to solve problems related to symbolic logic, matrix operations and Boolean algebra.

UNIT-I

Sets and Relations: Definition of sets, Types, Subsets, Superset, Power set, complement of a set, universal set, intersection and union of sets, Difference of sets, De-Morgan's laws, Cartesian products, Equivalent sets, Partitions of sets, Relations: Basic definitions, Domain and Range, Types of Relations, graphs of relations, properties of relations.

Logic and Propositional Calculus: Proposition and Compound Propositions, basic Logical Operations, Propositions and Truth Tables, Tautologies and Contradictions, Logical Equivalence, Duality law, Algebra of propositions, Conditional and Bi conditional Statements, Arguments, Logical Implication, Propositional Functions, Predicates and Quantifiers, Negation of Quantified Statements, Inference theory of the predicates calculus.

UNIT -II

Boolean Algebra: Introduction to Boolean algebra, Boolean algebra laws, Properties of Boolean algebra, Duality, Boolean Algebra as Lattices, Boolean identities, sub-algebra, Sum-of-Products Form for Sets, Sum of-Products Form for Boolean Algebra, Normal Forms, Minimal Boolean Expressions, Prime Implicants, Boolean Functions, Karnaugh Maps.

UNIT-III

Matrices: Introduction of a Matrix, its different kinds, matrix addition and scalar multiplication, multiplication of matrices, transpose etc., Square matrices, inverse and rank of a square matrix, Solution of Linear equations using matrices, Matrix Inversion method.

UNIT -IV

Graph Theory Introduction, Types of graph, Simple and Multiple Graphs, Directed and Undirected Graphs, Planer and Non-Planer Graphs, Eulerian and Hamiltonian Graph, Degree of vertex, Sub graphs, Isomorphic and Homeomorphic Graphs, Warshall's algorithm,Dijkstra's Shortest path algorithm, chromatic number, Bipartite Graph, Graph coloring, path, circuit, Adjacent and incidence matrices.

References:

1. Discrete Mathematics (Schaum's Outlines) by Seymour Lipschutz, Marc Laras Lipson,3rd Edition,McGraw Hill Education,2017
2. Discrete Mathematical structures for Computer Sciences, Varsha H. Patil, Revised 3rd Edition Paperback – 1 July 2017, PHI.
3. Applied Discrete Structures for Computer Science by Alan Doerr, March 1991,Galgotia Publications Pvt Ltd.
4. Discrete Mathematical Structures with Applications to Computer Science,by Jean-Paul Tremblay, R Manohar,2017,McGraw Hill Education.
5. Essential Discrete Mathematics for Computer Science by Harry Lewis, Rachel Zax, Princeton University Press,2019.

Course Outcomes:

CO-1.	This course helps to simplify and evaluate basic logic statements using compound statements, implications, inverses, converses, and contra positives using truth tables and the properties of logic.
CO-2.	Develop ability of conversion of logic sentence in terms of predicates, quantifiers, and logical connectives.
CO-3.	Students learn to use various matrix operations such as matrix addition, multiplication, transpose, inverse and calculating rank of matrix.
CO-4.	Students become able to apply the operations of sets, relations and use Venn diagrams to solve real life mathematical.
CO-5.	Students get in-depth knowledge of graph theory from the point of view of problem solving strategy used in game design and assignment problems.
CO-6.	Evaluate the Boolean functions and simplify the expressions using properties of Boolean algebra.

B.Sc. (Information Technology) Semester – I
COMMUNICATION SKILLS IN ENGLISH
Code: BCSE-1122

L	T	P	Credits
3	0	1	4

Time: 3 Hours **Max. Marks: 100**
Theory: 60
Practical: 15
Internal Assessment: 25

Suggested Pattern of Question Paper:
The question paper will be divided into two sections. Section A will consist of Twelve(12) questions of One(1) mark each. Section B will consist of Six questions of Eight(8) marks each. There will be internal choice wherever possible.

Section A

1. Do as directed
Articles, Conjunctions and Prepositions

(12X1=12 Marks)

Section B

1. Reading Skills: Reading Tactics and strategies; Reading purposes–kinds of purposes; Reading for direct meanings.
2. Comprehension questions of an unseen passage
3. Personal letter and Official/Business letters
4. Writing notices/agenda/minutes for public circulation on topics of professional interest.
5. Writing resume or converting a biographical note into resume
6. Translation from English to Vernacular (Punjabi/ Hindi) (Isolated Sentences)

(6X8=48 Marks)

Course Objectives:
I: To develop competence in written communication.
II: To inculcate innovative and critical thinking among the students.
III: To enable them to grasp the application of communication theories.
IV: To acquire knowledge of the latest technology related to communication skills.
V: To provide knowledge of multifarious opportunities in the field of this programme.

Course Contents:
1. Reading Skills: Reading tactics and strategies; Reading purposes–kinds of purposes and associated comprehension; Reading for direct meanings; Reading for understanding concepts, details, coherence, logical progression and meanings of phrases/ expressions.
Activities:
a. Active reading of passages on general topics
b. Reading newspaper, articles, editorials etc.
c. Short questions based on content and development of ideas of a given paragraph.

2. Writing Skills: Guidelines for effective writing; writing styles for application, resume, personal letter, official/ business letter, memo, notices etc.
Activities:
a) Personal and business letters.
b) Converting a biographical note into a sequenced resume.

c) Writing notices for circulation/ boards.
d) Making notes of given passage with headings and sub-headings
e) Writing newspaper reports based on given heading.

Recommended Books:

1. *Oxford Guide to Effective Writing and Speaking* by John Seely.
2. *The Written Word* by Vandana R Singh, Oxford University Press.
3. *Murphy's English Grammar* (by Raymond Murphy) CUP.

Course Outcomes:

The completion of this course enables students to:

1. Identify common errors in language and rectify them.
2. Develop and expand writing skills through controlled and guided activities.
3. Develop coherence, cohesion and competence in written discourse through intelligible pronunciation.
4. Develop the ability to handle the interview process confidently and learn the subtle nuances of an effective group discourse.
5. Communicate contextually in specific and professional situations with courtesy.

PRACTICAL (Marks: 15)

Course Contents:-

1. Reading dialogues (5 Marks)
2. Rapid reading (5 Marks)
3. Project File (5 Marks)

B.Sc. (Information Technology) Semester – I

Punjabi (Compulsory)-1

ਪੰਜਾਬੀ(ਲਾਜ਼ਮੀ)–1

Credit& Marks Distribution, Eligibility and Pre-Requisites of the Course

Course title & Code	Total Teaching Hours	Total Credits/ Hours per week	Credit distribution			Total Marks 100		Time Allowed in Exam	Eligibility criteria	Pre-requisite of the course (if any)
			L	T	P	Theory	IA			
ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)–1 BHPB-1101	60	4	4	0	0	75	25	3 Hours	Class 12th pass in any stream	Studied Punjabi up to 10th Standard

ਕੋਰਸ ਦਾ ਉਦੇਸ਼ Course Objective	**ਪਾਠ–ਕ੍ਰਮ ਨਤੀਜੇ Course Outcomes (COs)**
▪ ਵਿਦਿਆਰਥੀਆਂ ਵਿਚ ਸਾਹਿਤਕ ਰੁਚੀਆਂ ਪੈਦਾ ਕਰਨਾ। ▪ ਆਲੋਚਨਾਤਮਕ ਰੁਚੀਆਂ ਵਿਕਸਤ ਕਰਨਾ। ▪ ਮਾਤ ਭਾਸ਼ਾ ਦੀ ਸਮਝ ਨੂੰ ਵਿਕਸਤ ਕਰਨਾ।	▪ ਉਸ ਵਿਚ ਸਾਹਿਤ ਰੁਚੀਆਂ ਵਿਕਸਤ ਹੋਣਗੀਆਂ। ▪ ਉਸ ਵਿਚ ਸਾਹਿਤ ਸਿਰਜਣਾ ਦੀ ਸੰਭਾਵਨਾ ਵਧੇਗੀ। ▪ ਉਸ ਵਿਚ ਕਿਸੇ ਵੀ ਵਿਸ਼ੇ ਦਾ ਗਹਿਨ ਅਧਿਐਨ ਕਰਨ ਦਾ ਬੋਧ ਹੋਵੇਗਾ। ▪ ਉਹ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ ਬਾਰੇ ਗਿਆਨ ਹਾਸਲ ਕਰਨਗੇ

ਅੰਕ–ਵੰਡ ਅਤੇ ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

ਸਿਲੇਬਸ ਦੇ ਚਾਰ ਭਾਗ ਹਨ ਪਰ ਪ੍ਰਸ਼ਨ–ਪੱਤਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ। ਪਹਿਲੇ ਭਾਗ ਵਿਚ 1.5–1.5 (ਡੇਢ–ਡੇਢ) ਅੰਕ ਦੇ ਅਤਿ–ਸੰਖੇਪ (Objective Type) 10 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਜੋ ਕਿ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋਂ ਹੋਣਗੇ ਅਤੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹੋਣਗੇ। ਸਿਲੇਬਸ ਦੇ ਬਾਕੀ ਚਾਰ ਭਾਗਾਂ ਵਿਚ 02–02 ਲੇਖ ਨੁਮਾ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰੇਕ ਭਾਗ ਵਿਚੋਂ 01–01 ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੋਵੇਗਾ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ 15 ਅੰਕ ਹੋਣਗੇ। ਪੇਪਰ ਸੈੱਟਰ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ–ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ–ਕ੍ਰਮ

ਭਾਗ–ਪਹਿਲਾ

ਕਾਵਿ ਕਥਾ, (ਕਵਿਤਾ ਅਤੇ ਕਹਾਣੀ) ਡਾ. ਮਹਿਲ ਸਿੰਘ (ਮੁੱਖ ਸੰਪਾਦਕ) ਅਤੇ ਡਾ. ਆਤਮ ਸਿੰਘ ਰੰਧਾਵਾ (ਸੰਪਾਦਕ), ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।
(ਕਵਿਤਾ ਭਾਗ ਵਿਚੋਂ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ/ਕਵਿਤਾ ਦਾ ਵਿਸ਼ਾ–ਵਸਤੂ। ਕਹਾਣੀ ਭਾਗ ਵਿਚੋਂ ਸਾਰ/ਵਿਸ਼ਾ–ਵਸਤੂ)

ਭਾਗ–ਦੂਜਾ

ਪੰਜਾਬ ਦੇ ਮਹਾਨ ਕਲਾਕਾਰ (ਬਲਵੰਤ ਗਾਰਗੀ)
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
(ਅੰਮ੍ਰਿਤਾ ਸ਼ੇਰਗਿੱਲ ਤੋਂ ਭਾਈ ਸਮੁੰਦ ਸਿੰਘ ਤਕ)
(ਵਿਸ਼ਾ–ਵਸਤੂ/ਸਾਰ/ਨਾਇਕ ਬਿੰਬ)

ਭਾਗ–ਤੀਜਾ

(ੳ) ਪੈਰ੍ਹਾ ਰਚਨਾ (ਤਿੰਨਾਂ ਵਿਚੋਂ ਇਕ)
(ਅ) ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ

ਭਾਗ–ਚੌਥਾ

(ੳ) ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ: ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਅਤੇ ਉਪ–ਭਾਸ਼ਾ ਵਿਚਲਾ ਅੰਤਰ, ਪੰਜਾਬੀ ਉਪ–ਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ–ਚਿੰਨ੍ਹ।
(ਅ) ਪੰਜਾਬੀ ਭਾਸ਼ਾ: ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ।

B.Sc. (Information Technology) Semester – I

Basic Punjabi-1

ਮੁਢਲੀ ਪੰਜਾਬੀ–1

(In Lieu of Compulsory Punjabi)

Credit & Marks Distribution, Eligibility and Pre-Requisites of the Course

Course title &Code	Total Teaching Hours	Total Credits/ Hours per week	Credit distribution			Total Marks 100		Time Allowed in Exam	Eligibility criteria	Pre- requisite of the course (if any)
			L	T	P	Theory	IA			
ਮੁਢਲੀ ਪੰਜਾਬੀ–1 BPBI-1102	60	4	4	0	0	75	25	3 Hours	Class 12th pass in any stream	NOT Studied Punjabi up to 10th Standard

ਕੋਰਸ ਦਾ ਉਦੇਸ਼ Course Objective	**ਪਾਠ–ਕ੍ਰਮ ਨਤੀਜੇ Course Outcomes (COs)**
• ਵਿਦਿਆਰਥੀ ਨੂੰ ਗੁਰਮੁਖੀ ਲਿਪੀ ਤੋਂ ਜਾਣੂ ਕਰਾਉਣਾ। • ਵਿਦਿਆਰਥੀ ਨੂੰ ਸ਼ੁੱਧ ਪੰਜਾਬੀ ਪੜ੍ਹਨਾ–ਲਿਖਣਾ ਸਿਖਾਉਣਾ। • ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀਆਂ ਵਿਆਕਰਨਕ ਬਾਰੀਕੀਆਂ ਤੋਂ ਜਾਣੂ ਕਰਾਉਣਾ। • ਵਿਦਿਆਰਥੀ ਅੰਦਰ ਸ਼ੁੱਧ ਸੰਚਾਰ ਨੂੰ ਵਿਕਸਤ ਕਰਨਾ।	• ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ ਦੀ ਸਿਖਲਾਈ ਵਿਚ ਮੁਹਾਰਤ ਹਾਸਲ ਕਰਨਗੇ। • ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿਚ ਮੁਹਾਰਨੀ, ਲਗਾਂ–ਮਾਤਰਾਂ, ਸਵਰ ਅਤੇ ਵਿਅੰਜਨ ਅੱਖਰਾਂ ਦੀ ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ ਸਬੰਧੀ ਸਮਝ ਵਿਕਸਿਤ ਹੋਵੇਗੀ। • ਵਿਦਿਆਰਥੀ ਸ਼ੁੱਧ ਪੰਜਾਬੀ ਲਿਖਣ–ਪੜ੍ਹਨ ਦੇ ਸਮਰੱਥ ਹੋਣਗੇ। • ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਸ਼ੁੱਧ ਰੂਪਾਂ ਦੀ ਜਾਣਕਾਰੀ ਹਾਸਲ ਕਰਨਗੇ।

ਅੰਕ–ਵੰਡ ਅਤੇ ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

ਸਿਲੇਬਸ ਦੇ ਚਾਰ ਭਾਗ ਹਨ ਪਰ ਪ੍ਰਸ਼ਨ–ਪੱਤਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ। ਪਹਿਲੇ ਭਾਗ ਵਿਚ 01–01 ਅੰਕ ਦੇ ਅਤਿ–ਸੰਖੇਪ ਉੱਤਰ ਵਾਲੇ (Objective Type) 11 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਜੋ ਕਿ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋਂ ਹੋਣਗੇ ਅਤੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹੋਣਗੇ।ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਦੂਸਰੇ ਅਤੇ ਤੀਸਰੇ ਭਾਗ ਵਿਚ, ਸਿਲੇਬਸ ਦੇ ਪਹਿਲੇ ਅਤੇ ਦੂਸਰੇ ਭਾਗ ਵਿਚੋਂ 8–8 ਅੰਕਾਂ ਦੇ 3–3 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਜਿੰਨ੍ਹਾਂ ਵਿਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ 2–2 ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਹੋਣਗੇ। ਇਸੇ ਤਰ੍ਹਾਂ ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚੌਥੇ ਭਾਗ ਵਿਚ 4–4 ਅੰਕਾਂ ਦੇ 5 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਜਿੰਨ੍ਹਾਂ ਵਿਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ 4 ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਹੋਣਗੇ।ਭਾਗ ਪੰਜਵੇਂ ਵਿਚ 2–2 ਅੰਕਾਂ ਦੇ 10 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਜਿੰਨ੍ਹਾਂ ਵਿਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ 8 ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹੋਣਗੇ।

ਪਾਠ–ਕ੍ਰਮ

ਭਾਗ–ਪਹਿਲਾ

(ੳ) ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ:

ਨਾਮਕਰਣ ਤੇ ਸੰਖੇਪ ਜਾਣ–ਪਛਾਣ: ਗੁਰਮੁਖੀ ਵਰਣਮਾਲਾ, ਅੱਖਰ ਕ੍ਰਮ, ਸਵਰ ਵਾਹਕ (ੳ, ਅ, ੲ), ਲਗਾਂ–ਮਾਤਰਾਂ, ਪੈਰ ਵਿਚ ਬਿੰਦੀ ਵਾਲੇ ਵਰਨ, ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਨ, ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ

(ਅ) ਸਿਖਲਾਈ ਤੇ ਅਭਿਆਸ

ਭਾਗ–ਦੂਜਾ

ਗੁਰਮੁਖੀ ਆਰਥੋਗਰਾਫੀ ਅਤੇ ਉਚਾਰਨ:

ਸਵਰ, ਵਿਅੰਜਨ: ਮੁਢਲੀ ਜਾਣ–ਪਛਾਣ ਅਤੇ ਉਚਾਰਨ, ਮੁਹਾਰਨੀ, ਲਗਾਂ–ਮਾਤਰਾਂ ਦੀ ਪਛਾਣ

ਭਾਗ–ਤੀਜਾ

ਪੰਜਾਬੀ ਸ਼ਬਦ–ਜੋੜ: ਮੁਕਤਾ (ਦੋ ਅੱਖਰਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਤਿੰਨ ਅੱਖਰਾਂ ਵਾਲੇ ਸ਼ਬਦ), ਸਿਹਾਰੀ ਵਾਲੇ ਸ਼ਬਦ, ਬਿਹਾਰੀ ਵਾਲੇ ਸ਼ਬਦ, ਔਂਕੜ ਵਾਲੇ ਸ਼ਬਦ, ਦੁਲੈਂਕੜ ਵਾਲੇ ਸ਼ਬਦ, ਲਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਦੁਲਾਵਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਹੋੜੇ ਵਾਲੇ ਸ਼ਬਦ, ਕਨੌੜੇ ਵਾਲੇ ਸ਼ਬਦ, ਲਗਾਖਰ (ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ) ਵਾਲੇ ਸ਼ਬਦ

ਭਾਗ–ਚੌਥਾ

ਸ਼ੁੱਧ–ਅਸ਼ੁੱਧ ਸ਼ਬਦ

B.Sc. (Information Technology) Semester – I

PUNJAB HISTORY & CULTURE(From Earliest Times to C 320)(SpecialPaperinlieuofPunjabicompulsory)
(Forthosestudentswho arenot domicileofPunjab)
Course Code: BPHC-1104

Credit Hours(per week):04
L- T- P
4 -0- 0
Time:3Hours
TotalMarks:100
Theory:75
InternalAssessment:25

Instructions for the Paper Setters:

Question paper should consist of two sections—Section A and Section B. The paper setter must ensure that questions in Section–A do not cover morethanonepoint,andquestionsinSection–Bshouldcoveratleast50percentofthetheme.

Section–A: The examiner will set 15 objective type questions out of which the candidate shall attempt any 10 questions, each carrying 1½ marks. Thetotalweightageofthissectionwillbe15marks. Answer to each question should be in approximately one to two sentences.

Section–B: Theexaminerwillset8questions,two from each Unit. The candidate will attempt 4 questions selecting one from each Unit in about 1000 words. Each question willcarry15marks.Thetotalweightageofthissectionwillbe60marks.

Note: **The examiner is to set the question paper in two languages: English & Hindi.**

Course Objectives: The main objective of this course is to educate the history and culture of the Ancient Punjab to the students who are not domicile of the Punjab. It aims to familiarize these students with the physical features of ancient Punjab and its impact on its history and culture. It also provides them information about the different sources to construct the history and culture of theancientPunjab.Thecourseintendstoprovideknowledgeofsocial,economic, religious life of the Harappan civilization, Indo-Aryans, teachings and impact of Jainism and Buddhismin the Punjab.

Unit-I

1. Physical features of the Punjab and impact on history.

2. Sources of the ancient history of Punjab.

Unit-II

3. Harappan Civilization: Town planning; social, economic and religious life of the Indus Valley People.

4. The Indo-Aryans: Original home and settlement in Punjab.

Unit-III

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

6. Social, Religious and Economic life during later Vedic Age.

Unit-IV

7. Teachings and impact of Buddhism.

8. Jainismin the Punjab.

Suggested Readings:-

L.Joshi(ed), *HistoryandCultureofthePunjab,*Art-I,Patiala,1989(3rdedition)

L.M.JoshiandFaujaSingh(ed*), HistoryofPunjab,* Vol. I, Patiala1977.

Budha Parkash,*GlimpsesofAncientPunjab*, Patiala, 1983.

B.N.Sharma,*LifeinNorthern India*,Delhi.1966.

CourseOutcomes:

On Completing the Course, the Students will be able to :

CO-1 Learn the history and culture of the Ancient Punjab.
CO-2 Study the physical features of ancient Punjab.
CO-3 Understand about the sources of the history of the Punjab.
CO-4 Analyse the social, economic, religious life of the Harappan civilization and Vedic-Aryans.
CO-5 Learn the teachings and impact of Jainism and Buddhism in the Punjab

B.Sc. (Information Technology) Semester – I
BIT-114P: Lab-I PC Computing

Time: 3 Hrs. **Total Marks: 50**

Credits		
L	T	P
0	0	2

Practical Marks: 37

Practical Internal AssessmentMarks:13

Course Objectives:

1.	Provide a knowledge base for Computer Fundamentals & MS Word upon which you can build.
2.	Use real-world examples and procedures that will prepare you to be a skilled user of Computer & MS Word, MS Power Point & MS Excel.
3.	Provide hands-on use of Microsoft Office applications Word, Excel and Power Point. Completion of the assignments will result in MS Office applications knowledge and skills.

Practical- MS Office 2010/Open Office

Course Outcomes:

Upon completion of this course, the students will be able to:

CO-1.	Identify the applications of computer in daily life.
CO-2.	Understand the practical concepts of MSWord, MS Excel and MS PowerPoint.
CO-3.	Knowledge and understanding on successful completion of this subject the students have the ability to perform tools of MS Office.
CO-4.	Develop skills of working with MS Word, MS PowerPoint, MS excel.

MS–Word 2010:

1. Anatomy of Word Window
2. Creation, Saving, Opening document
3. Formatting (Character, line and page)
4. Finding and replacing text
5. Inserting files, page numbers, bookmarks, symbols, dates, page breaks, page numbers and Headers and Footers.
6. Creating a Table and various operations applied on it
7. Page Layout(page setup, margin, watermark, orientation, page border, indentation)
8. Mail Merge (using wizards).

MS Power Point 2010:

1. Components of Power point
2. Creation, opening and saving presentation
3. Inserting information, table, graphs, picture, clip Art, audio and video
4. Apply transition, animation.
5. Views (normal, slide sorter view, notes page, reading view)

MS Excel 2010:

1. Exploring Spreadsheet window
2. Entering, Editing and formatting data (Conditional)
3. Entering and Editing Formulas, inbuilt functions
4. Absolute, Relative and mixed referencing
5. Filtering

B.Sc. (Information Technology) Semester – I
BIT-115P: Lab-II C Language

Time: 3 Hrs. **Total Marks: 50**

Credits		
L	**T**	**P**
0	**0**	**2**

Practical Marks: 37

Practical Internal Assessment Marks:13

Course Objectives:

1	To learn the fundamental programming concepts and methodologies which are essential to building good C programs.
2	To practice the fundamental programming methodologies in the C programming language via laboratory experiences. Microsoft Visual Studio is the programming environment that will used.
3	To code, document, test and implement a well-structured, robust computer program using the C programming language.
4	To write reusable modules (collections of functions).

Practical- Practical Programming in C

Course Outcomes:

Upon completion of this course, the students will be able to:

CO-1.	Use the fundamentals of C programming in trivial problem solving.
CO-2.	Apply skill of identifying appropriate programming constructs for problem solving.
CO-3.	Ability to work with arrays of complex objects.
CO-4.	Enhance skill on problem solving by constructing algorithms.
CO-5.	Apply skill of identifying appropriate programming constructs for problem Solving.

Programming based on following topics

Introduction to C: Basic programs of C.

I/O Functions: formatted functions (printf(), scanf()) and Unformatted functions(getchar(), getche(), getch(), gets(), putchar(), putch() and puts())

Storage Classes: auto, register, static, extern.

Operators: Arithmetic operators, Unary operators, Relational Operators, Logical Operators, Assignment and Conditional Operators

Control Statements: Decision making statements (if and switch), Iterative statements (while, do–while and for statements, nested loops) and transfer statements (break, continue and goto statements)

Functions: defining and accessing functions, passing arguments to function, and recursion.

Arrays: Defining and accessing one dimensional array element, passing arrays to a function, multi–dimensional arrays.

Strings: string inbuilt functions

Structures & Unions: Defining, accessing structure and union variables.

Pointer: Declarations and Accessing pointer variables and operations on pointers.

Data Files: File opening and closing, Modes (reading, writing).

B.Sc. (Information Technology) Semester – I

Semester I

Skill Enhancement Course

SEC–112: Fundamentals of Commerce

Time: 3 Hours **Credits: 2**

Max. Marks: 50

Theory: 37

Internal assessment: 13

Instructions for Question Paper:

Section A: It will consist of ten short answer questions carrying1 Mark each out of which the students are required to attempt any nine.

Section B: It will consist of five questions carrying 4 marks each from Part I.

Section C: It will consist of five questions carrying 4 marks each from Part II.

Note: Students are required to attempt any seven questions out of total ten questions from Section B and Section C together, choosing at least three questions from each section.

Course Objective: To make students aware about the conceptual framework and inculcates the techniques,methods and practice of Commerce, Management, Banking and Insurance.

Course Content:

Part-I

Commerce & Management

Commerce: Meaning, Scope,Functions of Commerce, Trade and Aids to trade,
E-Commerce. Forms of Business Organizations: Sole Proprietorship, Partnership and Company

Management : Meaning, Nature and Scope of Management. Functions and Principles of Management.

Part II

Banking & Insurance

Banking: Meaning,Functions,Types of Banks in India, Types of Bank Accounts,Procedure for opening Bank Accounts.

Insurance: Meaning, Role and Importance of Insurance, Principles of Insurance, Procedure for obtaining an Insurance Policy.

Recommended Books:

1. Bhusan Y.K "Fundamentals of Business Organization and Management", 1980, Sultan Chand & Sons, New Delhi.
2. Tulsian, P.C.and Pandey V., "*Business Organisation and Management*", 2009, Pearson Education, New Delhi
3. Stoner, J. Freeman, R. & Gilbert, D., *"Management", 1995, Prentice Hall of India.*
4. Koontz, H., "Principles of Management (Ascent series)", *2004, Tata McGraw Hill Publishing.*
5. Kaur Sawraj,Annie, "Principles of Management", Kalyani Publishers
6. Gupta P.K., "Insurance and Risk Management", Himalaya Publishers.
7. "Banking-Theory & Practice", Kalyani Publishers.

Course Outcomes:

Sr.No.	On completion of this course, the students will be able to:
CO1	Develops creative, innovative skills and ethical values relating with commerce.
CO2	Enables students to apply the knowledge of business and commerce in finding solution to complex organizational problems.
CO3	Imparts continuous learning through practical approach and development of professional skills relevant to trade and commerce.

B.Sc. (Information Technology) Semester – I
Course Code: ZDA111
Course Title-Drug Abuse: Problem, Management and Prevention
PROBLEMOF DRUG ABUSE

Credit hrs./wk.:1

Time: 3 Hours **Max.Marks: 25**

Instructions for the Paper Setters:

1) There will be two sections A and B.
2) Section A is compulsory and will be of 5 marks consisting of 8 short answer type questions carrying 1marks each covering the whole syllabus. The candidates are required to attempt 5 questions out of 8 short answer type questions. The answer should notexceed50 words.
3) Candidates shall be required to attempt 4 questions from Section B, selecting one question from each unit and each question carries 5 marks. Preferably, the question should not be split into more than two sub-parts.

Course Objectives-The course aims to-

CO-1.	Generate the awareness against drug abuse.
CO-2.	Describe a variety of models and the ores of addiction and other problems related to substance abuse.
CO-3.	Describe the behavioral, psychological, physical health and social impact of psycho active substances.
CO-4.	Provideculturallyrelevantformalandinformaleducationprogramsthatraiseawarenessa nd support for substance abuse prevention and there cover process.
CO-5.	Describe factors that increase likelihood for an individual, community or group to beat risk of substance used is orders.

UNIT–I

- **Meaning of Drug Abuse**

  Meaning of drug abuse

  Nature and Extent of Drug Abuse: State and National Scenario

UNIT-II

- **Consequences of Drug Abuse for**

  Individual: Education, Employment, Income.

  Family : Violence.

  Society: Crime.

  Nation : Law and Order problem.

UNIT-III

- **Management of Drug Abuse**

  Medical Management: Medication for treatment of different types of drug abuses.

  Medication to reduce withdrawal effects.

UNIT-IV

- **Psychiatric Management:** Counseling, Behavioral and Cognitive therapy.
- **Social Management:** Family, Group therapy and Environmental Intervention.

References:

1. Ahuja,Ram(2003),SocialProblemsin India, RawatPublication,Jaipur.
2. Extent,PatternandTrendofDrugUseinIndia, MinistryofSocialJusticeand Empowerment, Government of India, 2004.
3. Inciardi,J.A.1981. TheDrugCrimeConnection.BeverlyHills: SagePublications. 23
4. JasjitKaurRandhawa&SamreetRandhawa,"DrugAbuseProblem,Management& Prevention", KLS, ISBN No. 978-81-936570-8-9, (2019).
5. Kapoor.T.(1985)DrugepidemicamongIndian Youth,NewDelhi:Mittal Pub.
6. Modi,IshwarandModi,Shalini(1997)Drugs:AddictionandPrevention,Jaipur:RawatPublication.
7. Sain,Bhim1991,DrugAddictionAlcoholism,SmokingobscenityNewDelhi:Mittal Publications.
8. Sandhu,RanvinderSingh,2009,DrugAddictioninPunjab:ASociologicalStudy. Amritsar. Guru Nanak Dev University.
9. Singh,C.P. 2000.Alcoholand DependenceamongIndustrial Workers:Delhi: Shipra.
10. Sussman,SandAmes,S.L.(2008).DrugAbuse:Concepts,PreventionandCessation, Cambridge University Press.
11. WorldDrugReport2011, UnitedNations officeof Drugand Crime.

CourseOutcomes:Thestudents will be able-

CO-1.	To describe issues of cultural identity, ethnic background, age and gender in prevention, treatment and recovery.
CO-2.	To describe warning sign, symptoms, and the course of substance used is orders.
CO-3.	To describe principles and philosophy of prevention, treatment and recovery.
CO-4.	Todescribecurrentandevidenced-basedapproachespracticedinthefieldofdrug addiction.

B.Sc. (Information Technology)

Semester-II

SN	Course Code	Course Name	Distribution of The Marks				Lectures Per week			Credit Distribution			Total Credit L+T+P	Page No.
			Theory	Internal Assessment	Practical	Total	L	T	P	L	T	P		
Discipline Specific Course (DSC)														
1	BIT-121	Principles of Digital Electronics	75	25	-	100	5	1	0	3	1	0	4	22-23
2	BIT-122	Introduction to Programming-C++	75	25	-	100	5	1	0	3	1	0	4	24-25
3	BIT-123	Numerical Methods & Statistical Techniques	75	25	-	100	5	1	0	3	1	0	4	26-27
4	BIT-124P	Lab-I Practical-C++Programming Language	-	13	37	50	0	0	6	0	0	2	2	34-35
5	BIT-125P	Lab-II Implementation of Numerical Methods in C/C++	-	13	37	50	0	0	6	0	0	2	2	36
Ability Enhancement Course (AEC)														
6	BCSE-1222	Communication Skills in English	60	25	15	100	4	0	2	3	0	1	4	28-29
7	BHPB-1201/ BPBI-1202/ BPHC-1204	Punjabi /Basic Punjabi (Mudhli Punjabi) (Compulsory) / Punjab History & Culture	75	25	-	100	6	0	0	4	0	0	4	30-33
Skill Enhancement Course(SEC)														
8	SEC-122	Basics of Accounting &Taxation	19	06	-	25	2	0	0	1	0	0	1	37
Value Added Course(VAC)														
9	ZDA121	*Drug Abuse: Problem, Management and Prevention(Compulsory paper)	-	-	-	25	2	0	0	1	0	0	1	38-379
												Total Credits=26		

Note: * This paper marks will not be included in the total marks.

B.Sc. (Information Technology) Semester – II

BIT-121: Principles of Digital Electronics
Discipline Specific Course (DSC)

Time: 3 Hrs. **Total Marks: 100**

Credits		
L	T	P
3	1	0

Theory Marks: 75

Theory Internal Assessment Marks:25

Note for paper setter and students:

1. **Medium of Examination is English Language.**
2. **There will be five sections.**
3. **Section A is compulsory and will be of 15 marks consisting of 8 short answer type questions carrying 2.5 mark each covering the whole syllabus. The answer should not exceed 50 words. The students will have to attempt any 6 questions in this section.**
4. **Sections B, C, D and E will be set from units I, II, III & IV respectively and will consist of two questions of 15 marks each from the respective unit. The students are required to attempt one question from each of these sections.**

Course Objectives:

1	To familiarize the concept of various number systems.
2	To introduce the concept of logic gates and logic families.
3	To acquire the knowledge of the minimization techniques in digital electronics.
4	To design combinational circuits and sequential circuits using logic gates.
5	To impart knowledge of how to design registers in digital electronics.
6	To understand the concept of digital logic levels.

UNIT-I

1. Number Systems: Introduction to Decimal, Binary, Octal and Hexadecimal Numbers. Complements. Signed Binary Numbers (Arithmetic Addition & Subtraction), Binary Codes (BCD, Excess-3, Gray codes, ASCII), Binary Storage and Registers.

2. Boolean Algebra and LogicGates: Basic Definitions, Postulates and theorems of Boolean Algebra, Boolean Functions, Canonical and Standard Forms, De-Morgan's Theorem Reducing Boolean expressions, Digital Logic Gates: (AND, OR NOT, NAND, NOR, EX-OR, EX- NOR), Implementations using Basic Gates, Universal Gates.

UNIT -II

3. Minimization Techniques: Canonical and Standard forms SOP and POS of Boolean functions, K-Maps simplifications up to Five-Variable Map, Sum of Products and Product of Sums Simplification, Don't-Care Conditions.

4. Combinational Logic: Half Adder and Full Adder, Binary Adder and Subtractor, Decimal Adder, Comparator, Decoders, Encoders, Multiplexers.

UNIT-III

5. Synchronous Sequential Logic: Sequential Circuits, Latches, Flip-Flops (SR, JK, JK Master Slave, D and T-type). Negative edge and Positive edge triggered clocks
6. Registers and Counters: Shift Registers (Serial-in Serial-out, Serial-in Parallel-out, Parallel-in Serial-out, Parallel-in Parallel-out), Ripple Counters, Synchronous and Asynchronous Counters, Mod counters up/down counters.

UNIT -IV

7. Memory and Programmable Logic: Introduction, Random-Access Memory, Memory Decoding, Error Detection and Correction, Read-Only Memory, Programmable Array Logic.
8. Computer Concepts: Basic Computer System, concepts of hardware and software, Operating Systems, Microcontrollers and Embedded Systems., Digital Signal Processing, Digital Signal Processor (DSP).

References:

1.Integrated Electronics by Millman, Halkias McGraw Hill.
2. Malvino: Digital Computer Electronics, McGraw Hill.
3. D.A. Hodges & H.G. Jackson, Analysis and Design of Integrated Circuits, International, 1983.
4. Joph. F. Wakerley, Digital Principles and Practices.
5. Ujjenbeck, John: Digital Electronics: A Modern Approach, Prentice Hall, 1994.
6. Mano, M. Morris: Digital Logic and Computer Design, Edition, 1993
7. Electronics by R.K Gaur.

Course Outcomes: On Completing the course, the students will be able to:

CO-1	Gain knowledge of different types of number systems and their conversions in digital electronics.
CO-2	Use Boolean algebra to minimize and simplify Boolean expressions
CO-3	Illustrate realization of SOP and POS forms
CO-4	Design of various combinational circuits using logic gates
CO-5	Design and develop sequential circuits using flip-flops.

B.Sc. (Information Technology) Semester – II
BIT-122: Introduction to Programming - C++
Discipline Specific Course (DSC)

Time: 3 Hrs. **Total Marks: 100**

Credits		
L	T	P
3	1	0

Theory Marks: 75

Theory Internal Assessment Marks:25

Note for paper setter and students:

1. **Medium of Examination is English Language.**
2. **There will be five sections.**
3. **Section A is compulsory and will be of 15 marks consisting of 8 short answer type questions carrying 2.5 mark each covering the whole syllabus. The answer should not exceed 50 words. The students will have to attempt any 6 questions in this section.**
4. **Sections B, C, D and E will be set from units I, II, III & IV respectively and will consist of two questions of 15 marks each from the respective unit. The students are required to attempt one question from each of these sections.**

Course Objectives:

1	To learn the fundamental programming concepts and methodologies which are essential to building good C++ programs.
2	To practice the fundamental programming methodologies in the C++ programming language via laboratory experiences. Microsoft Visual Studio is the programming environment that will be used.
3	To code, document, test, and implement a well-structured, robust computer program using the C++ programming language.
4	To write reusable modules (collections of functions).

UNIT-I

1. **Getting Started:**. Introduction, A brief history of C++, Variables , constants, Expression, Statements, Comments and keywords of C++, Operators in C++: Arithmetic, Relational, Logical,Assignment, Increment/Decrement, Conditional, Precedence of Operators , Data type, Type Conversion, library function.

2. **Input / Output Statements** : Inputting using in and outputting using cout statements. Preprocessor directives, Basic program construction.A Complete C++ Program:Invoking Turbo C++, naming your program, using the editor, saving your program, compiling and linking, running the program. Errors :Compiler, linker and runtime. Other IDE Features:Compiling and linking shortcut exiting from IDE, examining files, opening an existing file, DOS shell.

UNIT -II

3. **Decision Making and Looping Statement :**If Statement, If-else statement, nesting of if statement, switch statement, conditional operator statement.
While loop, do loop, for loop, nesting of loops, break and continue statement, go to statement.

4.**Arrays :**Defining an array, array type, array elements, Accessing and initializing elements of array, Programming of C++ with array, String handling, array of strings.

UNIT-III

5. Functions : Definition of function, Declaring function, Local, global variables, execution of function, Passing argument to function, Return values Reference arguments, Overloading functions, Inline function, friend function and default parameter., Storage classes.

6. **Structures:** A simple structure, specifying the structure, defining astructure variable, Accessing Structure member, Other structure features. Structure within structure.Structure and classes. Array of structures.

7. Object Oriented Programming Objects & Classes, Constructor & Destructor, Operator overloading: Overloading unary operators, Overloading binary operators, Data conversion, Pitfalls operator overloading and conversion.

UNIT -IV

8. Inheritance Derived class and Base Class, Derived Class Constructors, Overriding member functions, Inheritance in the English distances class, class hierarchies, Public and Private Inheritance, Level of inheritance.

9. Polymorphism: Problems with single inheritance, Multiple inheritance, Virtual Functions**,** Pure Virtual Functions.

References:

1. C++ & Graphics by Vijay Mukhi's
2. Turbo C++ by Robert Lafore.
3. C++ Programming Language by Schaum's outline series.
4. Object –Oriented Programming with C++ by E. Balagursamy, 2017 edition.
5. C++, The Complete Reference by Herbert Schildt.

Course Outcomes: On Completing the course, the students will be able to:

CO-1.	Use the fundamentals of C programming in trivial problem solving.
CO-2.	Enhance skill on problem solving by constructing algorithms.
CO-3.	Identify solution to a problem and apply control structures and user defined functions for solving the problem.
CO-4.	Apply skill of identifying appropriate programming constructs for problem Solving.

B.Sc. (Information Technology) Semester – II

BIT-123: Numerical Methods and Statistical Techniques
Discipline Specific Course (DSC)

Time: 3 Hrs. **Total Marks: 100**

Credits		
L	T	P
3	1	0

Theory Marks: 75

Theory Internal Assessment Marks:25

Note for paper setter and students:

1. **Medium of Examination is English Language.**
2. **There will be five sections.**
3. **Section A is compulsory and will be of 15 marks consisting of 8 short answer type questions carrying 2.5 mark each covering the whole syllabus. The answer should not exceed 50 words. The students will have to attempt any 6 questions in this section.**
4. **Sections B, C, D and E will be set from units I, II, III & IV respectively and will consist of two questions of 15 marks each from the respective unit. The students are required to attempt one question from each of these sections.**

Course Objectives:

1.	To enhance the problem solving skills of engineering students using an extremely powerful problem solving tool namely numerical methods.
2.	This will help students choose, develop and apply the appropriate numerical techniques for your problem, interpret the results, and assess accuracy.
3.	The problems cover **I.** Systems of linear equations; linear least squares problems **II.** Interpolation and approximation.

UNIT-I

Introduction:

1. Numerical Methods, Numerical methods versus numerical analysis, Errors and Measures of Errors.
2. Non–linear Equations, iterative Solutions, Multiple roots and other difficulties, Interpolation methods, Methods of bi–section, False position method, Newton Raphson – method.
3. Simultaneous Solution of Equations, Gauss Elimination Method, Gauss Jordan Method.

UNIT –II

4. Numerical Integration and different Trapezoidal Rule, Simpson's 3/8 Rule.
5 Interpolation and Curve Fitting, Lagrangian Polynomials, Newton's Methods: Forward Difference Method, Backward Difference Method Divided Difference Method.

UNIT -III

6 Least square fit linear trend, Non–linear trend.
$Y = ax^b$
$Y = ab^x$
$Y = ae^x$
Polynomial fit: $Y = a+bx+cx^2$

Statistical Techniques:

1. Measure of Central Tendency, Mean Arithmetic, Mean Geometric, Mean Harmonic, Mean, Median, Mode.

UNIT -IV

Statistical Techniques:

2. Measure of Dispersion, Mean Deviation, Standard Deviation, Co–efficient of Variation.

References:

1. V. Rajaraman: Computer Oriented Numerical Methods, Prentice Hall of India Private Ltd., New Delhi.
2. B.S. Grewal, Numerical Methods for Engineering, Sultan Chand Publication.
3. V. Rajaraman: Computer Oriented Numerical Methods, Prentice Hall of India Private Ltd., New Delhi.
4. S.P Gupta, Statistical Methods, Sultan Chand & Sons Publications.

Course Outcomes: On completion of this course students will able to:

CO-1.	Understand numerical techniques to find the roots of non-linear equations and solution of system of linear equations.
CO-2.	Apply numerical methods to obtain approximate solutions to mathematical problems.
CO-3.	Understand the difference operators and the use of interpolation.
CO-4.	Analyses and evaluate the accuracy of common numerical methods
CO-5.	Interpret calculation and errors in numerical method.
CO-6.	Writes mathematical solutions and their interpretation in a clear and concise manner.

B.Sc. (Information Technology) Semester – II

COMMUNICATION SKILLS IN ENGLISH
Code:BCSE-1222

L	T	P	Credits
3	0	1	4

Time: 3 Hours **Max. Marks: 100**
Theory: 60
Practical: 15
Internal Assessment: 25

Suggested Pattern of Question Paper:
The question paper will be divided into two sections. Section A will consist of Twelve(12) questions of One(1) mark each. Section B will consist of Six questions of Eight(8) marks each. There will be internal choice wherever possible.

Section A

1. Do as directed
Tenses and Change of voice

(12X1=12Marks)

Section B

1. **Listening Skills**: Barriers to listening; effective listening skills; feedback skills.
2. **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.
3. Drafting of a short speech on a given topic.
4. Transcoding (given dialogue to prose or given prose to dialogue).
5. Taking notes on a speech/lecture/telephonic conversations .
6. Translation from Vernacular (Punjabi/ Hindi) to English (Paragraph)

(6X8=48 Marks)

Course Objectives:

I: To develop competence in oral and visual communication.
II: To inculcate innovative and critical thinking among the students.
III: To enable them to grasp the application of communication theories.
IV: To acquire knowledge of the latest technology related to communication skills.
V: To provide knowledge of multifarious opportunities in the field of this programme.

Course Contents:

1. **Listening Skills:** Barriers to listening; effective listening skills; feedback skills, attending telephone calls; note taking.

Activities:

a) Listening exercises – Listening to conversation, speech/ lecture and taking notes.

2. **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, situation based Conversation in English; essentials of Spoken English

Activities:

a) Conversation; dialogue and speech

b) Oral description or explanation of a common object, situation or concept.
c) Interviews and group discussion

Recommended Books:

1. *Oxford Guide to Effective Writing and Speaking* by John Seely.
2. *The Written Word* by Vandana R Singh, Oxford University Press
3. *Murphy's English Grammar* (by Raymond Murphy) CUP

Course Outcomes:

The completion of this course enables students to:

1. Identify common errors in language and rectify them.
2. Develop and expand Oral skills through controlled and guided activities.
3. Develop coherence, cohesion and competence in oral discourse through intelligible pronunciation.
4. Develop the ability to handle the interview process confidently and learn the subtle nuances of an effective group discourse.
5. Communicate contextually in specific and professional situations with courtesy.

PRACTICAL (Marks: 15)

Course Contents:-

1. Oral Presentation. (5 Marks)
2. Group Discussion. (5 Marks)
3. Mock Interview (5 Marks)

B.Sc. (Information Technology) Semester – II

Punjabi (Compulsory)-2

ਪੰਜਾਬੀ(ਲਾਜ਼ਮੀ)–2

Credit& Marks Distribution and Pre-Requisites of the Course

Course title & Code	Total Teaching Hours	Total Credits/ Hours per week	Credit distribution			Total Marks 100		Time Allowed in Exam
			L	T	P	Theory	IA	
ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)–2 **BHPB-1201**	60	4	4	0	0	75	25	3 Hours

ਕੋਰਸ ਦਾ ਉਦੇਸ਼ Course Objective	**ਪਾਠ–ਕ੍ਰਮ ਨਤੀਜੇ Course Outcomes (COs)**
▪ ਵਿਦਿਆਰਥੀਆਂ ਵਿਚ ਸਾਹਿਤਕ ਰੁਚੀਆਂ ਪੈਦਾ ਕਰਨਾ। ▪ ਆਲੋਚਨਾਤਮਕ ਰੁਚੀਆਂ ਨੂੰ ਵਿਕਸਤ ਕਰਨਾ। ▪ ਵਿਦਿਆਰਥੀ ਨੂੰ ਦਫ਼ਤਰੀ ਅਤੇ ਘਰੇਲੂ ਚਿੱਠੀ ਪੱਤਰ ਤੋਂ ਜਾਣੂ ਕਰਵਾਉਣਾ। ▪ ਭਾਸ਼ਾਈ ਗਿਆਨ ਵਿਚ ਵਾਧਾ ਕਰਨਾ।	▪ ਉਸ ਅੰਦਰ ਸਾਹਿਤਕ ਰੁਚੀਆਂ ਪ੍ਰਫੁਲਿੱਤ ਹੋਣਗੀਆਂ। ▪ ਉਸ ਅੰਦਰ ਸਾਹਿਤ ਸਿਰਜਣਾ ਦੀ ਸੰਭਾਵਨਾ ਵਧੇਗੀ। ▪ ਵਿਦਿਆਰਥੀ ਚਿੱਠੀ-ਪੱਤਰ ਦੀ ਲਿਖਣ ਸ਼ੈਲੀ ਤੋਂ ਜਾਣੂ ਹੋਵੇਗਾ। ▪ ਉਹ ਭਾਸ਼ਾਈ ਬਣਤਰ ਤੋਂ ਜਾਣੂ ਹੋਵੇਗਾ।

ਅੰਕ–ਵੰਡ ਅਤੇ ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

ਸਿਲੇਬਸ ਦੇ ਚਾਰ ਭਾਗ ਹਨ ਪਰ ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ। ਪਹਿਲੇ ਭਾਗ ਵਿਚ 1.5-1.5 (ਡੇਢ-ਡੇਢ) ਅੰਕ ਦੇ ਅਤਿ-ਸੰਖੇਪ (Objective Type) 10 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਜੋ ਕਿ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋਂ ਹੋਣਗੇ ਅਤੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹੋਣਗੇ। ਸਿਲੇਬਸ ਦੇ ਬਾਕੀ ਚਾਰ ਭਾਗਾਂ ਵਿਚ 02-02 ਲੇਖ ਨੁਮਾ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰੇਕ ਭਾਗ ਵਿਚੋਂ 01-01 ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੋਵੇਗਾ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ 15 ਅੰਕ ਹੋਣਗੇ। ਪੇਪਰ ਸੈੱਟਰ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ–ਕ੍ਰਮ

ਭਾਗ–ਪਹਿਲਾ

ਵਾਰਤਕ ਦੇ ਰੰਗ, (ਨਿਬੰਧ ਅਤੇ ਰੇਖਾ–ਚਿਤਰ) (ਸੰਪਾਦਕ) ਡਾ. ਮਹਿਲ ਸਿੰਘ, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।
(ਨਿਬੰਧ ਭਾਗ ਵਿਚੋਂ ਸਾਰ/ਵਿਸ਼ਾ-ਵਸਤੂ। ਰੇਖਾ-ਚਿਤਰ ਭਾਗ ਵਿਚੋਂ ਸਾਰ/ਨਾਇਕ ਬਿੰਬ)

ਭਾਗ–ਦੂਜਾ

ਪੰਜਾਬ ਦੇ ਮਹਾਨ ਕਲਾਕਾਰ (ਬਲਵੰਤ ਗਾਰਗੀ)
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
(ਸਤੀਸ਼ ਗੁਜਰਾਲ ਤੋਂ ਸੁਰਿੰਦਰ ਕੌਰ ਤਕ)
(ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ/ਨਾਇਕ ਬਿੰਬ)

ਭਾਗ–ਤੀਜਾ

(ੳ) ਦਫ਼ਤਰੀ ਚਿੱਠੀ ਪੱਤਰ
(ਅ) ਮੁਹਾਵਰੇ ਅਤੇ ਅਖਾਣ

ਭਾਗ–ਚੌਥਾ

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

B.Sc. (Information Technology) Semester – II

Basic Punjabi-2

ਮੁਢਲੀ ਪੰਜਾਬੀ–2

(In Lieu of Compulsory Punjabi)

Credit & Marks Distribution and Pre-Requisites of the Course

Course title & Code	Total Teaching Hours	Total Credits/ Hours per week	Credit distribution			Total Marks 100		Time Allowed in Exam
			L	T	P	Theory	IA	
ਮੁਢਲੀ ਪੰਜਾਬੀ–2 BPBI-1202	60	4	4	0	0	75	25	3 Hours

ਕੋਰਸ ਦਾ ਉਦੇਸ਼ Course Objective	**ਪਾਠ–ਕ੍ਰਮ ਨਤੀਜੇ Course Outcomes (COs)**
• ਵਿਦਿਆਰਥੀ ਅੰਦਰ ਸ਼ਬਦ ਬਣਤਰ ਦੀ ਸਮਝ ਵਿਕਸਤ ਕਰਨਾ। • ਵਿਦਿਆਰਥੀ ਨੂੰ ਸ਼ਬਦ ਪ੍ਰਕਾਰ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਦਾਨ ਕਰਨਾ। • ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਵਿਆਕਰਨਕ ਪ੍ਰਬੰਧ ਸਬੰਧੀ ਗਿਆਨ ਕਰਾਉਣਾ। • ਸਿਖਲਾਈ ਤੇ ਅਭਿਆਸ ਦੁਆਰਾ ਪੰਜਾਬੀ ਸ਼ਬਦ ਭੰਡਾਰ ਵਧਾਉਣਾ।	• ਉਹ ਪੰਜਾਬੀ ਸ਼ਬਦ-ਬਣਤਰ ਦੀ ਜਾਣਕਾਰੀ ਹਾਸਲ ਕਰਕੇ ਭਾਸ਼ਾਈ ਗਿਆਨ ਨੂੰ ਵਿਕਸਿਤ ਕਰਨਗੇ। • ਪੰਜਾਬੀ ਸ਼ਬਦ-ਰਚਨਾ ਸਬੰਧੀ ਮੁਹਾਰਤ ਹਾਸਲ ਕਰਨਗੇ। • ਵਿਦਿਆਰਥੀ ਸ਼ਬਦਾਂ ਦੀਆਂ ਭਿੰਨ-ਭਿੰਨ ਕਿਸਮਾਂ ਤੋਂ ਜਾਣੂ ਹੋਵੇਗਾ। • ਵਿਦਿਆਰਥੀਆਂ 'ਚ ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ ਭੰਡਾਰ 'ਚ ਵਾਧਾ ਹੋਵੇਗਾ।

ਅੰਕ–ਵੰਡ ਅਤੇ ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

ਸਿਲੇਬਸ ਦੇ ਚਾਰ ਭਾਗ ਹਨ ਪਰ ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ। ਪਹਿਲੇ ਭਾਗ ਵਿਚ 01-01 ਅੰਕ ਦੇ ਅਤਿ-ਸੰਖੇਪ ਉੱਤਰ ਵਾਲੇ (Objective Type) 11 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਜੋ ਕਿ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋਂ ਹੋਣਗੇ ਅਤੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹੋਣਗੇ।ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਦੂਸਰੇ ਅਤੇ ਤੀਸਰੇ ਭਾਗ ਵਿਚ, ਸਿਲੇਬਸ ਦੇ ਪਹਿਲੇ ਅਤੇ ਦੂਸਰੇ ਭਾਗ ਵਿਚੋਂ 8-8 ਅੰਕਾਂ ਦੇ 3-3 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਜਿੰਨ੍ਹਾਂ ਵਿਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ 2-2 ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਹੋਣਗੇ। ਇਸੇ ਤਰ੍ਹਾਂ ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚੌਥੇ ਭਾਗ ਵਿਚ 4-4 ਅੰਕਾਂ ਦੇ 5 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਜਿੰਨ੍ਹਾਂ ਵਿਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ 4 ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਹੋਣਗੇ।ਭਾਗ ਪੰਜਵੇਂ ਵਿਚ 8-8 ਅੰਕਾਂ ਦੇ 3 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।ਜਿੰਨ੍ਹਾਂ ਵਿਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ 2 ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹੋਣਗੇ।

ਪਾਠ–ਕ੍ਰਮ

ਭਾਗ–ਪਹਿਲਾ

ਪੰਜਾਬੀ ਸ਼ਬਦ-ਬਣਤਰ:

ਧਾਤੂ, ਵਧੇਤਰ (ਅਗੇਤਰ, ਮਧੇਤਰ, ਪਿਛੇਤਰ), ਪੰਜਾਬੀ ਕੋਸ਼ਗਤ ਸ਼ਬਦ ਅਤੇ ਵਿਆਕਰਨਕ ਸ਼ਬਦ

ਭਾਗ–ਦੂਜਾ

ਪੰਜਾਬੀ ਸ਼ਬਦ-ਪ੍ਰਕਾਰ:

(ੳ) ਸੰਯੁਕਤ ਸ਼ਬਦ, ਸਮਾਸੀ ਸ਼ਬਦ, ਦੋਜਾਤੀ ਸ਼ਬਦ, ਦੋਹਰੇ/ਦੁਹਰੁਕਤੀ ਸ਼ਬਦ ਅਤੇ ਮਿਸ਼ਰਤ ਸ਼ਬਦ

(ਅ) ਸਿਖਲਾਈ ਤੇ ਅਭਿਆਸ

ਭਾਗ–ਤੀਜਾ

ਪੰਜਾਬੀ ਸ਼ਬਦ-ਰਚਨਾ:

ਇਕ-ਵਚਨ/ਬਹੁ-ਵਚਨ, ਲਿੰਗ-ਪੁਲਿੰਗ, ਬਹੁਅਰਥਕ ਸ਼ਬਦ, ਸਮਾਨਅਰਥਕ ਸ਼ਬਦ, ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਲਈ ਇਕ ਸ਼ਬਦ, ਸ਼ਬਦ ਜੁੱਟ, ਵਿਰੋਧਅਰਥਕ ਸ਼ਬਦ, ਸਮਨਾਮੀ ਸ਼ਬਦ

ਭਾਗ–ਚੌਥਾ

ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ

ਖਾਣ-ਪੀਣ, ਸਾਕਾਦਾਰੀ, ਰੁੱਤਾਂ, ਮਹੀਨਿਆਂ, ਗਿਣਤੀ, ਮੌਸਮ, ਬਜ਼ਾਰ, ਵਪਾਰ, ਧੰਦਿਆਂ ਨਾਲ ਸੰਬੰਧਿਤ

B.Sc. (Information Technology) Semester – II

PUNJABHISTORY&CULTURE(C321TO1000A.D.)

(Special Paper in lieu of Punjabi compulsory)

(ForthosestudentswhoarenotdomicileofPunjab)

Course Code: BPHC-1204

Credit Hours (per week):04
L- T- P
04-0-0

Time:3Hours **Total.Marks:100**
Theory:75
InternalAssessment:25

Instructions for the Paper Setters:
Question paper should consist of two sections—Section A and Section B. The paper setter must ensure that questions in Section–A do not cover morethanonepoint,andquestionsinSection–Bshouldcoveratleast50percentofthetheme.

Section–A: The examiner will set 15 objective type questions out of which the candidate shall attempt any 10 questions, each carrying 1½ marks. Thetotalweightageofthissectionwillbe15marks. Answer to each question should be in approximately one to two sentences.

Section–B: Theexaminerwillset8questions,two from each Unit. The candidate will attempt 4 questions selecting one from each Unit in about 1000 words. Each question willcarry15marks.Thetotalweightageofthissectionwillbe60marks

Note:**The examiner is to set the question paper in two languages: English & Hindi.**

Course Objectives: The main objective of this course is to educate the students who are not domicile of the Punjab about the history and culture of the Ancient Punjab. It is to provide them knowledge about the social, economic, religious, cultural and political life of the people of the Punjab during the rule of various dynasties such as The Mauryans, The Khushans, The Guptas,The Vardhanas and other ancientruling dynasties of the period under study.

Unit-I

1. The Punjab under Chandra gupta Maurya and Ashoka.
2. The Kushans and their Contribution to the Punjab.

Unit-II

3. The Punjab under the Gupta Emperors.
4. The Punjab under the Vardhana Emperors

Unit-III

5. PoliticalDevelopments7thCenturyto1000A.D.

6. Socio-culturalHistoryofPunjabfrom7thCenturyto1000A.D.

Unit-IV

7. Development of languages and Literature.

8. Development of art & Architecture.

Suggested Readings:-

L. Joshi (ed.*), History and Culture of the Punjab*, Part-I, Patiala, 1989 (3rdedition).

L.M. JoshiandFaujaSingh(ed), *HistoryofPunjab*,Vol.I,Patiala1977.

Budha Parkash,*GlimpsesofAncientPunjab*, Patiala, 1983.

B.N.Sharma, *LifeinNorthernIndia*,Delhi. 1966.

CourseOutcomes:

On completingthecourse, thestudentswillbeableto:

CO-1 Understand the history and culture of the Punjab in Ancient Period.
CO-2 Analyse social,economic,religious,culturalandpoliticallifeofAncientIndiandynasties.
CO-3 Study about the politicaldevelopmentsfrom7th centuryto 1000AD.
CO-4 Understand socio-cultural history of the Punjab from 7th century to 1000 AD.
CO-5 Analyse language,literature,artandarchitectureofAncient Punjab.

B.Sc. (Information Technology) Semester – II

BIT-124P: Programming Lab- I (C++ Programming Language)

Time: 3 Hrs. **Total Marks: 50**

Credits		
L	**T**	**P**
0	**0**	**2**

Practical Marks: 37

Practical Internal Assessment Marks:13

Course Objectives:

1.	To understand how C++ improves C with object-oriented features.
2.	To learn how to write inline functions for efficiency and performance.
3.	To know the syntax and semantics of the C++ programming language.
4.	To learn how to design C++ classes for code reuse.
5.	To know how to implement copy constructors and class member functions.
6.	To understand the concept of data abstraction and encapsulation.
7.	To learn how to overload functions and operators in C++.
8.	To understand how containment and inheritance promote code reuse in C++.
9.	To learn how inheritance and virtual functions implement dynamic binding with polymorphism.
10.	To understand how to design and implement generic classes with C++ templates.
11.	To learn how to use exception handling in C++ programs.

Practical based on Programming in C++

Course Outcomes:

On completion of this course students will able to:

CO-1.	Use C++ more effectively.
CO-2.	Learn to think more analogously, creatively as well as comparatively.
CO-3.	Develop better software development skills in other language too.
CO-4.	Take review or tour of Programming in C and make aware of limitation of C, thereby understanding need of the origin of C++.
CO-5.	Raise programming level of students in C++to be able to apply in the real life.
CO-6.	Impart knowledge in such a way that students should be able to use of concept of Object-Oriented Programming approach in their programming skills.

CO-7.	Provide the knowledge of implementation of various features of C++i.e. concept of Object, Object communication, Encapsulation, Data hiding, overloading, etc.
CO-8.	Acquire in depth knowledge and develop software in C++.
CO-9.	Understand how to do programming in C++environment.
CO-10.	Understand and implement the concepts of object-oriented approach using C++.
CO-11.	Students will be able to identify different class attributes, member functions, base class and derived class and their relationships among them.
CO-12.	Learn how to reuse the code using polymorphism.
CO-13.	Students will be able to solve a real-life existing problem using the features of C++.
CO-14.	Develop software/big and complex programs for a complex problem.
CO-15.	Implement advance features of object-oriented approach in other various language(s).

B.Sc. (Information Technology) Semester – II
BIT-125P: Lab-II : Implementation of Numerical Methods in C++

Time: 3 Hrs. **Total Marks: 50**

Credits		
L	**T**	**P**
0	**0**	**2**

Practical Marks: 37

Practical Internal Assessment Marks:13

Course Objectives:

1.	To understand and implement various concepts of numerical and statistical methods to solve real life problems.
2.	To develop the mathematical skills of the students in the areas of numerical methods.
3.	To provide conceptual understanding of various numerical methods like solution of non-linear equations ,system of linear equations, interpolation, numerical integration with an aim of helping the students to understand the fundamentals, concepts and practical use of these methods in the field of computer sciences and applications.
4.	To provide understanding of statistical problems using different techniques.

Practical- Implementation of Numerical Methods and Statistical Techniques Using C++.
Course Outcomes:

On completion of this course students will able to:

CO-1.	Demonstrate understanding of common numerical methods and how they are used to obtain approximate solutions.
CO-2.	Apply various numerical methods to find solution of algebraic and transcendental non-linear equations and also solve system of linear equations numerically using direct and iterative methods.
CO-3.	Understand the methods to construct interpolating polynomials and finite difference concepts (forward, backward, and divided)for prediction and also find integration to find area under curve.
CO-4.	Learn fundamental concepts of statistical and optimization methods.
CO-5.	With reference to frequency distribution and measures of central tendency(like mean, median and mode), measures of dispersion(mean deviation ,standard deviation),Curve fit.

B.Sc. (Information Technology) Semester – II
Skill Enhancement

SEC – 122: Basics of Accounting &Taxation

Time: 3 Hours
Credits: 1

Max. Marks: 25
Theory: 19
Internal assessment: 06

Instructions for Question Paper:
Section A: It will consist of four short answer questions carrying 1 Mark each out of which the students are required to attempt any three.

Section B: It will consist of three questions carrying 4 marks each from Part I, out of which the students are required to attempt two.

Section C: It will consist of three questions carrying 4 marks each from Part II, out of which the students are required to attempt two.

Course Objective: To make students aware about the conceptual framework of Accounting and Taxation and inculcates the techniques, methods and practice of Accounting and Taxation.

Course Content:

Part-I

Accounting: Meaning, Features and Branches of Accounting, Advantages and Limitations of Accounting, Users of Accounting Information, Accounting Concepts, Principles and Conventions, Meaning and Importance of Financial Statements.

Part II

Taxation: **Direct Tax:** Meaning of Direct Taxes, Features, Merits and Demerits.

Indirect Tax (GST): Meaning, Features, Advantages and Limitations.

Direct Tax Vs Indirect Tax

Recommended Books:

1. Maheshwari S.N., "Financial Accounting", 2009, Vikas Publishing House, New Delhi.
2. Maheshwari, S.N. and Maheshwari, S.K, "*Financial Accounting*", 2009, Vikas Publishing House, New Delhi.
3. Datey V.S., Taxmann's GST Ready Reckoner Taxman, Publications (P) Ltd.
4. Gupta S.S., GST-How to meet your obligations 2017. Taxman, Publications (P) Ltd.
5. Sharma Sanjeet, Anand Shailza, *"Goods and Service Tax"*, V.K.Global Publications Private Ltd.

Course Outcomes:

Sr.No.	On completion of this course, the students will be able to:
CO1	Get proper knowledge about Accounting and Taxation.
CO2	Understand the accounting concepts and significance of Financial Statements
CO3	Gain conceptual knowledge about Direct Taxation and Indirect Taxation

B.Sc. (Information Technology) Semester – II

Course Code: ZDA121
Course Title-DRUGABUSE:PROBLEM,MANAGEMENTAND PREVENTION
DRUGABUSE: MANAGEMENT ANDPREVENTION
(Compulsory for all Under Graduate Classes)

Credit hrs/wk.:1

Time: 3 Hours **Max.Marks:25**

Instructions for the Paper Setters:

1) There will be two sections A and B.
2) Section A is compulsory and will be of 5 marks consisting of 8 short answer type questions carrying 1mark each covering the whole syllabus. The candidates are required to attempt 5 questions out of 8 short answer type questions. The answer should notexceed50 words.
3) Candidates shall be required to attempt 4 questions from Section B, selecting one question from each unit and each question carries 5 marks. Preferably, the question should not be split into more than two sub-parts.

Course Objectives: The course aim is to-

CO-1.	Describe the role of family in the prevention of drug abuse.
CO-2.	Describe the role of school and teachers in the prevention of drug abuse.
CO-3.	Emphasize the role of media and educational and awareness program.
CO-4.	Provide know how about various legislation and Acts against drug abuse.

UNIT-I

Role of family: Parent child relationship, Family support, Supervision, Shaping values, Active Scrutiny.

UNIT-II

School: Counselling, Teacher as role-model.

Parent-Teacher-Health Professional Coordination, Random testing on students.

UNIT-III

Controlling Drug Abuse: Media: Restraint on advertisements of drugs, advertisements on bad effects of drugs, Publicity and media, Campaigns against drug abuse, Educational and awareness program

UNIT-IV

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),SocialProblemsin India, RawatPublication,Jaipur.
2. Extent,PatternandTrendofDrugUseinIndia, MinistryofSocialJusticeand Empowerment, Government of India, 2004.
3. Inciardi,J.A.1981. TheDrugCrimeConnection.BeverlyHills: SagePublications.
4. JasjitKaurRandhawa&SamreetRandhawa,"DrugAbuseProblem,Management& Prevention", KLS, ISBN No. 978-81-936570-8-9, (2019).
5. Kapoor.T.(1985)DrugepidemicamongIndian Youth,NewDelhi:Mittal Pub.
6. Modi,IshwarandModi,Shalini(1997)Drugs:AddictionandPrevention,Jaipur:RawatPublication.
7. Sain,Bhim1991,DrugAddictionAlcoholism,SmokingobscenityNewDelhi:Mittal Publications.
8. Sandhu,RanvinderSingh,2009,DrugAddictioninPunjab:ASociologicalStudy. Amritsar. Guru Nanak Dev University.
9. Singh,C.P. 2000.Alcoholand DependenceamongIndustrial Workers:Delhi: Shipra.
10. Sussman,SandAmes,S.L.(2008).DrugAbuse:Concepts,PreventionandCessation, Cambridge University Press.
11. WorldDrugReport2011, UnitedNations officeof Drugand Crime.

Course Outcomes: The students will be able to-

CO-1.	Understand the importance of family and its role in drug abuse prevention.
CO-2.	Understand the role of support system especially in schools and inter-relationships Between students, parents and teachers.
CO-3.	Understand impact of media on substance abuse prevention.
CO-4.	Understand the role of awareness drives, campaigns etc.in drug abuse management.
CO-5	Learn about the Legislations and Acts governing drug trafficking and Abuse in India.