

UG Classes Syllabus Unitization & Prescribed Books (Session 2021-2022)

Department of CS & IT

Class – BCA-I Semester

Pattern of Question Paper - Eight questions of equal marks (Specified in the syllabus), 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.

Subject - Introduction to Programming – C

Month wise Division	Syllabus Unitization
September	<u>SECTION–A</u> 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 statements <u>SECTION–B</u> Control Statements: Preliminaries, While, Do–while and For statements, Nested loops, If–else, Switch, Break – Continue statements.
October	<u>SECTION–B</u> Program Structure Storage Class: Automatic, external and static variables, multiple programs, more about library functions. <u>SECTION–C</u> Functions: Brief overview, defining, accessing functions, passing arguments to function, specifying argument data types, function prototypes, recursion. Arrays: Defining, processing an array, passing arrays to a function, multi–dimensional arrays. Strings: String declaration, string functions and string manipulation
November	<u>SECTION–D</u> Structures & Unions: Defining and processing a structure, user defined data types, structures and pointers, passing structures to functions, self-referenced structure, unions. Pointers: Fundamentals, pointer declaration, passing pointer to a function, pointer and one dimensional arrays, operation on pointers, pointers & multi–dimensional arrays of pointers, passing functions, other functions, more about pointer declarations.

Prescribed Book

Book Name – Programming using C Language

Author – Mandeep Handa

Publisher – ABS Publications

Subject : Communication Skills in English–I (Paper–V)

Month Wise Division	Syllabus Unitization
September	SECTION–A :Reading Skills: Reading Tactics and strategies; Reading Purposes SECTION–B: Reading for understanding concepts, details, coherence, logical progression and meanings of phrases/ expressions. Comprehension questions in multiple choice format & Short answer type questions; SECTION–C : Writing Skills: Guidelines for effective writing; writing styles for application. SECTION–D : Resume, Notices
October	SECTION–A: Reading Skills: Kinds of Purposes and Associated Comprehension SECTION–B : Practice of Unseen Passages for Comprehension based on multiple choice format & Short answer type questions. SECTION–C: Writing Skills: Personal letter Writing ; Organizing the details in a sequential order SECTION–D: Practice of Resume, Notices & Memo Writing
November	SECTION–A: Reading Skills: Reading for Direct meanings & Revision of all topics. SECTION–B: Practice & Revision of Unseen Passages for Comprehension based on multiple choice format & Short answer type questions. SECTION–C: Writing Skills : Official/ Business letters. SECTION–D: Practice and Revision of Resume, Notices & Memo Writing

Prescribed Book :

Name: KLS-Communication Skills for BCA/B.Sc.(IT) & B.Com(Financial Services) Semester-I

Author: Singh & Bhatia

Publisher : Kasturi Lal & Sons, Educational Publishers, Amritsar-Jalandhar.

Paper – 6 Punjabi (Compulsory)

Month wise Division	Syllabus Unitization
September	<ul style="list-style-type: none"> • ਸਰਵੋਤਮ ਪੰਜਾਬੀ ਸਾਹਿਤ (ਕਵਿਤਾ ਭਾਗ) ਭਾਈ ਵੀਰ ਸਿੰਘ, ਧਨੀ ਰਾਮ ਚਾਤ੍ਰਕ, ਮੋਹਨ ਸਿੰਘ ਤੇ ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ। • (ਕਹਾਣੀ ਭਾਗ)--ਕੁਲਫੀ, ਤੈਂ ਕੀ ਦਰਦ ਨਾ ਆਇਆ, ਸਾਂਝ ਕੁਰਾਹੀਆ, ਰਫਤਾਰ • ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ: ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਤੇ ਉਪਭਾਸ਼ਾ ਵਿੱਚ ਅੰਤਰ, ਪੰਜਾਬੀ ਉਪ ਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ ਚਿੰਨ। • ਪੈਰਾ ਰਚਨਾ ਅਭਿਆਸ
October	<ul style="list-style-type: none"> • ਇਤਿਹਾਸਕਯਾਦਾਂ(ਲੇਖ ਸੰਗ੍ਰਹਿ) ਅਫਰੀਕਾ ਦੀ ਯਾਦ, 1917 ਤੋਂ ਪਹਿਲਾਂ ਰੂਸ, ਗੁਰੂ ਕਾ ਬਾਗ ਅਤੇ ਮੁਲਤਾਨ, ਹਿੰਦੁਸਤਾਨ ਛੇੜ ਦੇ। • ਸਰਵੋਤਮ ਪੰਜਾਬੀ ਸਾਹਿਤ (ਭਾਗ) ਡਾ ਹਰਭਜਨ ਸਿੰਘ, ਸ਼ਿਵ ਕੁਮਾਰ ਬਟਾਲਵੀ।(ਕਹਾਣੀ ਭਾਗ) ਪਾਤਸ਼ਾਹ, ਛਿੰਦਾ ਪੁੱਤ। • ਪੈਰਾਪੜ੍ਹਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ
November	<ul style="list-style-type: none"> • ਇਤਿਹਾਸਕ ਯਾਦਾਂ- ਹਵਾ ਵਿਚ ਗਰਜ, ਸਾਕਾ ਸ੍ਰੀ ਨਨਕਾਣਾ ਸਾਹਿਬ। • ਸਰਵੋਤਮ ਪੰਜਾਬੀ ਸਾਹਿਤ (ਕਵਿਤਾ ਭਾਗ) ਸੁਰਜੀਤ ਪਾਤਰ, ਪਾਸ਼। (ਕਹਾਣੀ ਭਾਗ) ਜਹਾਜ਼ ਵਾਲੀ ਟੈਂਕੀ। • ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਨਿਕਾਸ • ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਵਿਕਾਸ।

ਪਾਠ-ਪੁਸਤਕਾਂ

ਸਰਵੋਤਮ ਪੰਜਾਬੀ ਸਾਹਿਤ, ਸੰਪਾ ਡਾ ਰਮਿੰਦਰ ਕੌਰ ਤੇ ਡਾ ਮੇਘਾ ਸਲਵਾਨ, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ

ਇਤਿਹਾਸਕ ਯਾਦਾਂ, ਸੰਪਾ ਡਾ ਐਸ ਐਸ ਅਮੇਲ, ਪੰਜਾਬੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ

Subject: Basic Punjabi / **ਮੁੱਢਲੀ ਪੰਜਾਬੀ/

Monthwise	Syllabus unitization
September	<p>ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ (ਨਾਮਕਰਣ ਅਤੇ ਸੰਖੇਪ ਜਾਣ ਪਛਾਣ)</p> <p>*ਗੁਰਮੁਖੀ ਵਰਣ ਮਾਲਾ , ਅੱਖਰ ਕ੍ਰਮ, ਸਵਰ-ਵਾਹਕ (ੳ, ਅ ,ੲ)</p> <p>*ਲਗਾਂ-ਮਾਤਰਾਂ: ਪੈਰ ਵਿਚ ਬਿੰਦੀ ਵਾਲੇ ਵਰਣ, ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਣ, ਬਿੰਦੀ, ਟਿੱਪੀ , ਅੱਧਕ।</p> <p>* ਲਗਾਖਰ (ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ ਵਾਲੇ ਸ਼ਬਦ ।</p>
October	<p>ਗੁਰਮੁਖੀ ਆਰਥੋਗਰਾਫੀ ਅਤੇ ਉਚਾਰਨ :</p> <p>ਸਵਰ, ਵਿਅੰਜਨ: ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ ਅਤੇ ਉਚਾਰਨ, ਮੁਹਾਰਨੀ ,ਲਗਾਂ-ਮਾਤ੍ਰਾਂ ਦੀ ਪਛਾਣ।</p> <p>ਸੁੱਧ ,ਅਸੁੱਧ (ਪੈਰੇ ਵਿੱਚ ਲਿਖੇ ਅਸੁੱਧ ਸ਼ਬਦਾਂ ਨੂੰ ਸੁੱਧ ਕਰਨਾ)</p>
November	<p>ਪੰਜਾਬੀ ਸ਼ਬਦ ਜੋੜ: ਮੁਕਤਾ (ਦੋ ਅੱਖਰਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਤਿੰਨ ਅੱਖਰਾਂ ਵਾਲੇ ਸ਼ਬਦ)</p> <p>ਸਿਹਾਰੀ ਵਾਲੇ ਸ਼ਬਦ, ਬਿਹਾਰੀ ਵਾਲੇ ਸ਼ਬਦ, ਐਕੜ ਦੁਲੈਂਕੜ ਵਾਲੇ ਸ਼ਬਦ, ਲਾਂ ,ਦੁਲਾਵਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਹੇੜੇ ਕਨੇੜੇ ਵਾਲੇ ਸ਼ਬਦ।</p>

**** Punjab History & Culture**

MONTH WISE DIVISION	SYLLABUS UNITISATION
SEPTEMBER	UNIT-I. Physical features of the Punjab and its impact on history. .Sources of the ancient history of Punjab UNIT-II. Harappan Civilization: Town planning: social, economic and religious life of the Indus Valley People.
OCTOBER	UNIT-II. The Indo- Aryans: Original home and settlements in Punjab . UNIT -III Social, Religious and Economic Life during Rig Vedic Age.
NOVEMBER	UNIT-III. Social, Religious and Economic Life during Later Vedic Age. Unit –IV Teachings and impact of Buddhism. Jainism in the Punjab.

Prescribed Book:-

Name- History and Culture of Punjab

Author-Raghunath Rai

Publisher – New Academic Publishing Company

Applied & Discrete Mathematics

Month wise Division	Syllabus Unitization
September	SECTION–A Sets and Relations: Definition of sets, subsets, complement of a set, universal set, intersection and union of sets, De-Morgan’s laws, Cartesian products, Equivalent sets, Countable and uncountable sets, minset, Partitions of sets, Relations: Basic definitions, graphs of relations, properties of relations SECTION–B 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,
October	SECTION–B Conditional and Bi conditional statements, Arguments, Logical Implication, Propositional Functions, Predicates and Quantifiers, Negation of Quantified Statements, Inference theory of the predicates calculus. SECTION–D Matrices: Introduction of a Matrix, its different kinds, matrix addition and scalar multiplication, multiplication of matrices, transpose etc.
November	SECTION–D Square matrices, inverse and rank of a square matrix, Matrix Inversion method. SECTION–C Boolean Algebra: Boolean algebra and its duality, Duality, Boolean Algebra as Lattices, Boolean identities, sub-algebra, Representation Theorem, Sum-of-Products Form for Sets, Sum of-Products Form for Boolean Algebra, Minimal Boolean Expressions, Prime Implicants, Boolean Functions, Karnaugh Maps.

Book name: Spectrum Applied and Discrete Mathematics

Author: D.R.Sharma

Publisher: Sharma publications

Paper – II : Introduction to Computers and Information Technology

Month wise Division	Syllabus Unitization
September	<p><u>SECTION–A</u> Introduction to Computers and its Applications: •Computer as a system, basic concepts, functional units and their inter relation. • Milestones in Hardware and Software. • Batch oriented / on–line / real time applications. • Application of computers</p> <p><u>SECTION–B</u> Interacting with the Computer: Input Devices: Keyboard, mouse, pens, touch screens, Bar Code reader, joystick, source data automation, (MICR, OMR, OCR), screen assisted data entry: portable / handheld terminals for data collection, vision input systems. Output Devices: Monitor, Serial line page printers, plotters, voice response units.</p>
October	<p><u>SECTION–C</u> Data Storage Devices and Media: Primary storage (Storage addresses and capacity, type of memory), Secondary storage, Magnetic storage devices and Optical Storage Devices Word Processor using Microsoft Office: 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</p> <p><u>SECTION–D</u> Presentation Software using Microsoft Office: Presentation overview, entering information, Presentation creation, opening and saving presentation, inserting audio and video</p>
November	<p><u>SECTION–D</u> Spreadsheet using Microsoft Office: Spreadsheet overview, Editing, Formatting, Creating formulas, Graphs.</p>

Prescribed Book

Book Name – Fundamentals of Computers and Information Technology

Author – Puneet Kumar

Publisher – Kalyani Publishers

Class - B.Sc. (Information Technology) I Sem

Paper – 1 Fundamentals of Computers

Month wise Division	Syllabus Unitization
September	SECTION–A 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. SECTION–B 2. Operating System Concepts: Role of an Operating System, Types of operating systems, Booting procedure and its types, Fundamentals and typical instructions of Windows & Non-Windows based Operating Systems.
October	SECTION–C 3. MS Word (Word for Windows): 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.
November	SECTION–D 4. MS – PowerPoint: 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.

Prescribed Book

Book Name – Fundamentals of Computers and Information Technology

Author – Puneet Kumar

Publisher – Kalyani Publishers

Paper–II: Introduction to Programming - C

Month wise Division	Syllabus Unitization
September	<p><u>SECTION–A</u> 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 statements</p> <p><u>SECTION–B</u> Control Statements: Preliminaries, While, Do–while and For statements, Nested loops, If–else, Switch, Break – Continue statements.</p>
October	<p><u>SECTION–B</u> Program Structure Storage Class: Automatic, external and static variables, multiple programs, more about library functions.</p> <p><u>SECTION–C</u> Functions: Brief overview, defining, accessing functions, passing arguments to function, specifying argument data types, function prototypes, recursion. Arrays: Defining, processing an array, passing arrays to a function, multi–dimensional arrays. Strings: String declaration, string functions and string manipulation</p>
November	<p><u>SECTION–D</u> Structures & Unions: Defining and processing a structure, user defined data types, structures and pointers, passing structures to functions, self-referenced structure, unions. Pointers: Fundamentals, pointer declaration, passing pointer to a function, pointer and one dimensional arrays, operation on pointers, pointers & multi–dimensional arrays of pointers, passing functions, other functions, more about pointer declarations.</p>

Prescribed Book

Book Name – Programming using C Language

Author – Mandeep Handa

Publisher – ABS Publications

Paper III: Applied & Discrete Mathematics

Month wise Division	Syllabus Unitization
September	SECTION–A Sets and Relations: Definition of sets, subsets, complement of a set, universal set, intersection and union of sets, De-Morgan’s laws, Cartesian products, Equivalent sets, Countable and uncountable sets, minset, Partitions of sets, Relations: Basic definitions, graphs of relations, properties of relations SECTION–B 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,
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November	SECTION–D Square matrices, inverse and rank of a square matrix, Matrix Inversion method. SECTION–C Boolean Algebra: Boolean algebra and its duality, Duality, Boolean Algebra as Lattices, Boolean identities, sub-algebra, Representation Theorem, Sum-of-Products Form for Sets, Sum of-Products Form for Boolean Algebra, Minimal Boolean Expressions, Prime Implicants, Boolean Functions, Karnaugh Maps.

Book name: Spectrum Applied and Discrete Mathematics

Author: D.R.Sharma

Publisher: Sharma publications

PAPER–V: COMMUNICATION SKILLS IN ENGLISH–I

Month Wise Division	Syllabus Unitization
September	SECTION–A :Reading Skills: Reading Tactics and strategies; Reading Purposes SECTION–B: Reading for understanding concepts, details, coherence, logical progression and meanings of phrases/ expressions. Comprehension questions in multiple choice format & Short answer type questions; SECTION–C : Writing Skills: Guidelines for effective writing; writing styles for application. SECTION–D : Resume, Notices
October	SECTION–A: Reading Skills: Kinds of Purposes and Associated Comprehension SECTION–B : Practice of Unseen Passages for Comprehension based on multiple choice format & Short answer type questions. SECTION–C: Writing Skills: Personal letter Writing ; Organizing the details in a sequential order SECTION–D: Practice of Resume, Notices & Memo Writing
November	SECTION–A: Reading Skills: Reading for Direct meanings & Revision of all topics. SECTION–B: Practice & Revision of Unseen Passages for Comprehension based on multiple choice format & Short answer type questions. SECTION–C: Writing Skills : Official/ Business letters. SECTION–D: Practice and Revision of Resume, Notices & Memo Writing

Prescribed Book :

Name: KLS-Communication Skills for BCA/B.Sc.(IT) & B.Com(Financial Services) Semester-I

Author: Singh & Bhatia

Publisher : Kasturi Lal & Sons, Educational Publishers, Amritsar-Jalandhar.

Paper – 6 Punjabi (Compulsory)

Month wise Division	Syllabus Unitization
September	<ul style="list-style-type: none"> • ਸਰਵੋਤਮ ਪੰਜਾਬੀ ਸਾਹਿਤ (ਕਵਿਤਾ ਭਾਗ) ਭਾਈ ਵੀਰ ਸਿੰਘ, ਧਨੀ ਰਾਮ ਚਾਤ੍ਰਕ, ਮੋਹਨ ਸਿੰਘ ਤੇ ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ। • (ਕਹਾਣੀ ਭਾਗ)--ਕੁਲਫੀ, ਤੈਂ ਕੀ ਦਰਦ ਨਾ ਆਇਆ, ਸਾਂਝ ਕੁਰਾਹੀਆ, ਰਫਤਾਰ • ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ: ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਤੇ ਉਪਭਾਸ਼ਾ ਵਿੱਚ ਅੰਤਰ, ਪੰਜਾਬੀ ਉਪ ਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ ਚਿੰਨ। • ਪੈਰਾ ਰਚਨਾ ਅਭਿਆਸ
October	<ul style="list-style-type: none"> • ਇਤਿਹਾਸਕਯਾਦਾਂ(ਲੇਖ ਸੰਗ੍ਰਹਿ) ਅਫਰੀਕਾ ਦੀ ਯਾਦ, 1917 ਤੋਂ ਪਹਿਲਾਂ ਰੂਸ, ਗੁਰੂ ਕਾ ਬਾਗ ਅਤੇ ਮੁਲਤਾਨ, ਹਿੰਦੁਸਤਾਨ ਛੇੜ ਦੇ। • ਸਰਵੋਤਮ ਪੰਜਾਬੀ ਸਾਹਿਤ (ਭਾਗ) ਡਾ ਹਰਭਜਨ ਸਿੰਘ, ਸ਼ਿਵ ਕੁਮਾਰ ਬਟਾਲਵੀ।(ਕਹਾਣੀ ਭਾਗ) ਪਾਤਸ਼ਾਹ, ਛਿੰਦਾ ਪੁੱਤ। • ਪੈਰਾਪੜ੍ਹਕੇਪ੍ਰਸ਼ਨਾਂਦੇਉੱਤਰ
November	<ul style="list-style-type: none"> • ਇਤਿਹਾਸਕ ਯਾਦਾਂ- ਹਵਾ ਵਿਚ ਗਰਜ, ਸਾਕਾ ਸ੍ਰੀ ਨਨਕਾਣਾ ਸਾਹਿਬ। • ਸਰਵੋਤਮ ਪੰਜਾਬੀ ਸਾਹਿਤ (ਕਵਿਤਾ ਭਾਗ) ਸੁਰਜੀਤ ਪਾਤਰ, ਪਾਸ਼। (ਕਹਾਣੀ ਭਾਗ) ਜਹਾਜ਼ ਵਾਲੀ ਟੈਂਕੀ। • ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਨਿਕਾਸ • ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਵਿਕਾਸ।

ਪਾਠ-ਪੁਸਤਕਾਂ

ਸਰਵੋਤਮ ਪੰਜਾਬੀ ਸਾਹਿਤ, ਸੰਪਾ ਡਾ ਰਮਿੰਦਰ ਕੌਰ ਤੇ ਡਾ ਮੇਘਾ ਸਲਵਾਨ, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ

ਇਤਿਹਾਸਕ ਯਾਦਾਂ, ਸੰਪਾ ਡਾ ਐਸ ਐਸ ਅਮੇਲ, ਪੰਜਾਬੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ

Subject: Basic Punjabi / **ਮੁੱਢਲੀ ਪੰਜਾਬੀ/

Monthwise	Syllabus unitization
September	<p>ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ (ਨਾਮਕਰਣ ਅਤੇ ਸੰਖੇਪ ਜਾਣ ਪਛਾਣ)</p> <p>*ਗੁਰਮੁਖੀ ਵਰਣ ਮਾਲਾ , ਅੱਖਰ ਕ੍ਰਮ, ਸਵਰ-ਵਾਹਕ (ੳ, ਅ ,ੲ)</p> <p>*ਲਗਾਂ-ਮਾਤਰਾਂ: ਪੈਰ ਵਿਚ ਬਿੰਦੀ ਵਾਲੇ ਵਰਣ, ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਣ, ਬਿੰਦੀ, ਟਿੱਪੀ , ਅੱਧਕ।</p> <p>* ਲਗਾਖਰ (ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ ਵਾਲੇ ਸ਼ਬਦ ।</p>
October	<p>ਗੁਰਮੁਖੀ ਆਰਥੋਗਰਾਫੀ ਅਤੇ ਉਚਾਰਨ :</p> <p>ਸਵਰ, ਵਿਅੰਜਨ: ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ ਅਤੇ ਉਚਾਰਨ, ਮੁਹਾਰਨੀ ,ਲਗਾਂ-ਮਾਤ੍ਰਾਂ ਦੀ ਪਛਾਣ।</p> <p>ਸੁੱਧ ,ਅਸੁੱਧ (ਪੈਰੇ ਵਿੱਚ ਲਿਖੇ ਅਸੁੱਧ ਸ਼ਬਦਾਂ ਨੂੰ ਸੁੱਧ ਕਰਨਾ)</p>
November	<p>ਪੰਜਾਬੀ ਸ਼ਬਦ ਜੋੜ: ਮੁਕਤਾ (ਦੇ ਅੱਖਰਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਤਿੰਨ ਅੱਖਰਾਂ ਵਾਲੇ ਸ਼ਬਦ)</p> <p>ਸਿਹਾਰੀ ਵਾਲੇ ਸ਼ਬਦ, ਬਿਹਾਰੀ ਵਾਲੇ ਸ਼ਬਦ, ਐਕੜ ਦੁਲੈਂਕੜ ਵਾਲੇ ਸ਼ਬਦ, ਲਾਂ ,ਦੁਲਾਵਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਹੇੜੇ ਕਨੇੜੇ ਵਾਲੇ ਸ਼ਬਦ।</p>

**** Punjab History & Culture**

MONTH WISE DIVISION	SYLLABUS UNITISATION
SEPTEMBER	UNIT-I. Physical features of the Punjab and its impact on history. .Sources of the ancient history of Punjab UNIT-II. Harappan Civilization: Town planning: social, economic and religious life of the Indus Valley People.
OCTOBER	UNIT-II. The Indo- Aryans: Original home and settlements in Punjab . UNIT -III Social, Religious and Economic Life during Rig Vedic Age.
NOVEMBER	UNIT-III. Social, Religious and Economic Life during Later Vedic Age. Unit –IV Teachings and impact of Buddhism. Jainism in the Punjab.

Prescribed Book:-

Name- History and Culture of Punjab

Author-Raghnath Rai

Publisher – New Academic Publishing Company

Class – BCA-III Semester

Pattern of Question Paper - Eight questions of equal marks (Specified in the syllabus), 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.

Subject - Computer Architecture

Month wise Division	Syllabus Unitization
September	<u>SECTION-A</u> Information Representation: Register Transfer Language, Various Registers, Implementing Common Bus Using Multiplexers: Logical; Arithmetic & Shift Micro – operations. Basic Computer Design Instruction Codes, Computer Instructions, Timing Signals, Instruction Cycle, Design of a Basic Computer.
October	<u>SECTION-B</u> CPU Design: General Register Organization, Stack Organized CPU, Instruction Formats, Addressing Modes, Program Control, Hardwired & Microprogrammed (Wilhe’s Design) Control Unit, RISC and CISC Characteristics. <u>SECTION-C</u> Memory Organization: Memory Hierarchy, Designs & Concepts of Main Memory, Auxiliary Memory, Associative Memory, Cache and Virtual Memory.
November	<u>SECTION-D</u> I/O Organization: I/O Interface, Modes of Transfer, Program Interrupt, DMA & I/O Processor. Pipeline & Vector Processing: Introduction to Parallel Processing and Pipelining, SISD, SIMD & MISD, MIMD Machines.

Prescribed Book

Book Name – Computer Architecture

Author – Amit Sharma

Publisher – UNIMAX Publishers

Subject - Paper – II: DATABASE MANAGEMENT SYSTEM

Month wise Division	Syllabus Unitization
September	SECTION–A Introduction to Data, Field, Record, File, Database, Database management system. Structure of database system, Advantage and disadvantage, levels of database system, Relational model, hierarchical model, network model, comparison of these models, E–R diagram, different keys used in a relational system, SQL.
October	SECTION–B DBA, responsibilities of DBA, Relational form like 1NF, 2NF, 3NF, BCNF, 4th NF, 5th NF, DBTG, concurrency control and its management, protection, security, recovery of database. SECTION–C SQL: Introduction to SQL–DDL, DML, DCL, Join methods & sub query, Union Intersection, Minus, Built in Functions, Views, Security amongst users, Sequences, Indexing
November	SECTION–C Cursors–Implicit & Explicit, Functions & Packages Database Triggers. SECTION–D Big Data: Introduction to Big Data and Analytics, Introduction to NoSQL

Prescribed Book

Book Name – Database Management System

Author – Anshuman Sharma

Publisher – Lakhanpal Publishers

PAPER III: INTRODUCTION TO PYTHON PROGRAMMING

Month wise Division	Syllabus Unitization
September	<u>SECTION–A</u> Introduction to Python: Python’s Technical Strengths, Execution Model, Process of Computational Problem Solving, Different ways to run Python Programs. Data and Expressions: Literals, Variables and Identifiers, Operators, Expressions, Strings, Statements and Data Types, Boolean Expressions (Conditions), Logical Operators, Selection Control, Nested conditions, Debugging Lists & Dictionaries: List Structures, Lists (Sequences) in Python, Iterating Over Lists (Sequences) in Python, Dictionaries and Files, Looping and dictionaries, Advanced text parsing
October	<u>SECTION–B</u> Control Structures: Conditional blocks using if, else and elif, While statement, Definite loops using For, Loop Patterns, Functions, Packages and Modules: Fundamental Concepts, Program Routines, Flow of Execution, Parameters & Arguments, Recursive Functions, Recursive Problem Solving, Iteration vs. Recursion, Understanding Packages, Modules, Top-Down Design, Python Modules Importing own module as well as external modules and packages. <u>SECTION–C</u> Objects and Their Use: Introduction to Object Oriented Programming, Concept of class, object and instances, Constructor, class attributes and destructors, Real time use of class in live projects, Inheritance, overlapping and overloading operators, Adding and retrieving dynamic attributes of classes, Programming using OOps support
November	<u>SECTION–C</u> Files: Opening Files, Using Text Files, Reading files, Writing files, Understanding read functions, read(), readline() and readlines(), Understanding write functions, write() and writelines(), Manipulating file pointer using seek, String Processing, Exception Handling <u>SECTION–D</u> Using Databases and SQL: Database Concepts, SQL basic summary, SQL Database connection using python, creating and searching tables, Programming using database connections, Basic Data modelling, Programming with multiple tables

Prescribed Book

Book Name – Computational Problem Solving Using Python

Author – Sushil Bhardwaj

Publisher – Kalyani Publishers

Class – BCA-V Semester

Pattern of Question Paper - Eight questions of equal marks (Specified in the syllabus), 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.

Paper – III: OPERATING SYSTEM

Month wise Division	Syllabus Unitization
September	<u>SECTION-A</u> 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. CPU-Scheduling: Basic concepts, Scheduling Criteria, Scheduling Algorithms, Algorithm Evaluation.
October	<u>SECTION-B</u> Process Synchronization: Critical – section problem, semaphores, classical problem of synchronization. Memory Management: Background, Logical v/s Physical address space, swapping, continuous allocation, paging, segmentation. <u>Section C</u> Virtual Memory: Background, demand paging, performance of demand paging, page replacement, page replacement algorithms, thrashing.
November	<u>SECTION-C</u> Secondary Storage Structures: Disk structures, Disk scheduling, Disk Reliability. <u>SECTION-D</u> Deadlocks: System Model, Deadlock characterization, methods for handling deadlocks, Deadlocks Prevention, Deadlock avoidance, Deadlock detection, Recovery from deadlock, combined approach to deadlock handling.

Prescribed Book

Book Name – Introduction to Operating Systems

Author – Charanjit Singh

Publisher – Kalyani Publishers

Subject - WEB TECHNOLOGIES

Month wise Division	Syllabus Unitization
September	<u>SECTION–A</u> Introduction to websites, Static vs dynamic websites, server side and client side scripting HTML 5 : Introduction , Structure of a web page , HTML Elements, HTML attributes, Basic Text Formatting tags, Comments, Links, Lists, Image, Style, Forms, Table, Media, Classes, iframes. CSS3 : Introduction , stylesheets , selectors , styling – backgrounds, texts , fonts , links , lists , tables , Box model JAVASCRIPT: Introduction, datatypes, variables, comments ,Operators, functions and events, basics of JQuery and AJAX
October	<u>SECTION–B</u> Introduction to PHP, basics, Data types, variables, comments, control statements, functions, PHP with web design, working with files, uploading a file, sessions, cookies, error handling , database connectivity with mysql <u>SECTION–C</u> HOSTING : Overview of Domain , Hosting , SSL Certificates and steps to host a website online. Introduction to Emerging Web Technologies: Introduction to Chatbot, Artificial Intelligence and Machine Learning basics used in websites.
November	<u>SECTION–D</u> EMERGING WEB TECHNOLOGIES: Basics of Internet Of Things (IOT) used in Websites, Basics of BlockChain Technology in Websites, Augmented Reality and Virtual Reality and Basics of Single page applications websites using Angular.

Prescribed Book

Book Name – Web Technologies

Author – Balram Singh Yadav

Publisher – ABS Publications

Subject -Paper -IV JAVA Programming Language

Month wise Division	Syllabus Unitization
September	<p><u>SECTION-A</u> JAVA BASICS: Introduction to Java, Features of Java, Structure of a Java Program, primitive data types, keywords, Identifiers, literals, operators and comments. OOPS: Object Oriented concepts Advantage of OOPs, Objects and Classes Strings: Declaring a string, Immutable string, string comparison, concatenation, substring, string tokenizer.</p> <p><u>SECTION-B</u> Inheritance: what is inheritance, types of inheritance, static import, Method overloading, method overriding, Runtime polymorphism, super keyword, final keyword</p>
October	<p><u>SECTION-B</u> Interfaces: Abstract classes, declaring an interface, relationship between classes and interface, interface inheritance, implementing multiple inheritance using interface Packages: what are packages, advantages of using packages, accessing package from another package, subpackaging, running packages by setting path and classpath.</p> <p><u>SECTION-C</u> Exception Handling: what is exception handling, checked and unchecked exceptions, try-catch, try-multiple catch, try – finally, throw and throws Multithreading: What is a thread, life cycle of a thread, creating a thread ,sleeping a thread , joining a thread , thread priority.</p>
November	<p><u>SECTION-D</u> Input /output: File input stream, File output stream, Buffered output stream ,Buffered input stream . Database connectivity: JDBC , JDBC drivers, steps to connect to the database, connectivity with MYs</p>

Prescribed Book

Book Name – Java Programming

Author – Anshuman Sharma

Publisher –Lakhanpal Publications

Subject - Paper – I: Computer Networks

Month wise Division	Syllabus Unitization
September	<u>SECTION–A</u> Basic concepts of Computer Networks, Client Server Network topologies. OSI Reference Model, TCP/IP Model Comparison and Critiques, Concepts of Routers, bridges, Repeaters, Gateways. <u>SECTION–B</u> Transmission Media: – Twisted Pair, Co–axial Cable, Baseband, Broadband, Fibre optics, Satellite, Wireless Transmission, Telephone System
October	<u>SECTION–B</u> Data Transmission: – Analog & Digital Transmission, Modem, Codec, Pulse Code Modulation Multiplexing, Circuit Switching, Packet Switching, message Switching, Hybrid Switching. <u>SECTION–D</u> Presentation Layer, Design Issues, Application Layer, Concept of E-mail and Remote Login Internetworking, Network Security.
November	<u>SECTION–C</u> The Data link Layer: Design Issues, Error Detection and Correction, Data Link Sliding Window Protocols. Network Layer: Design Issues, Congestion Control and Routing algorithms

Prescribed Book

Book Name – Computer Network

Author – Charanjeet Singh

Publisher – Kalyani Publications

Class – BSc IT-V Semester

Pattern of Question Paper - Eight questions of equal marks (Specified in the syllabus), 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.

Paper – II: OPERATING SYSTEM

Month wise Division	Syllabus Unitization
September	<u>SECTION–A</u> Introduction: Definition, evolution, need, early system, function, buffering spooling, single user, multiuser, multiprogramming, multiprocessing, multitasking, multithreading, batch processing, real time, time systems, time sharing systems, security, protection. Processor Management / CPU Scheduling: CPU – I/O Basic Cycle, process state, process control block, Scheduling, Queue, Schedulers, Scheduling Algorithms, Performance criteria, FCFS, SJF, Priority, SRTF, Round Robin, Multi – Levels users Algorithm.
October	<u>SECTION–B</u> Memory Management: Concept of Relocation, Swapping, backing storage, swap time, MFT, MFT job scheduling, region size selection, memory fragmentation, MVT, MVT job scheduling compaction, paging, segmentation. Virtual Memory: Overlays, demand paging, page fault, performance of demand paging, page replacement, page replacement algorithm, FIFO, Optimal page replacement, Thrashing.
November	<u>SECTION–C</u> Device Management: I/O and device management physical characteristics, FCFS, SSTF, SCAN, CSCAN. File Management: Disk and File Management <u>SECTION–D</u> Deadlocks: Definition, Necessary condition for deadlock, Deadlock Prevention Mutual exclusion, Hold and wait, No pre–emption, circular wait Banker’s algorithms, Recovery from deadlock, semaphores.

Prescribed Book

Book Name – Introduction to Operating Systems

Author – Charanjit Singh

Publisher – Kalyani Publishers

Subject - Paper – I Computer Networks

Month wise Division	Syllabus Unitization
September	<u>SECTION–A</u> Basic concepts of Computer Networks, Client Server Network topologies. OSI Reference Model, TCP/IP Model Comparison and Critiques, Concepts of Routers, bridges, Repeaters, Gateways. <u>SECTION–B</u> Transmission Media: – Twisted Pair, Co-axial Cable, Baseband, Broadband, Fibre optics, Satellite, Wireless Transmission, Telephone System
October	<u>SECTION–B</u> Data Transmission: – Analog & Digital Transmission, Modem, Codec, Pulse Code Modulation Multiplexing, Circuit Switching, Packet Switching, message Switching, Hybrid Switching. <u>SECTION–D</u> Presentation Layer, Design Issues, Application Layer, Concept of E-mail and Remote Login Internetworking, Network Security.
November	<u>SECTION–C</u> The Data link Layer: Design Issues, Error Detection and Correction, Data Link Sliding Window Protocols. Network Layer: Design Issues, Congestion Control and Routing algorithms

Prescribed Book

Book Name – Computer Network

Author – Charanjeet Singh

Publisher – Kalyani Publications

Subject - E-Business

Month wise Division	Syllabus Unitization
September	<u>SECTION-A</u> E – Commerce: Its definition, aims, process tools and results, EDI, VAN’s and internet as Promoters, Types of E – Commerce, Commerce – net. Steps to Star E – Commerce: H/W & S/W Requirements, steps involved in opening your own online business. EDI: EDI Vs Traditional Systems, EDI enabled procurement process, components of EDI system, EDI implementation issues.
October	<u>SECTION-B</u> Concerns for E – Commerce: Basic challenges to E – Commerce, Technological, legal and regulators heads, Internet Bandwidth & Technological Issues. NII: Technical issues, standards & Services GII, Issues that confront us in relation to securing electronic transactions. Implementation of digital signatures. Authentication Mechanisms. Electronic cash, its elements, legal issues, risks, paper document versus Electronic document Laws for E – Commerce legal issues for Internet Commerce. Re – Engineering for Change: Business process re – engineering BPR, Methodology Planning Methods for change to EC / EDI. <u>SECTION-C</u> Case Studies: To demonstrate usefulness of E – Commerce in various business areas. Banks, Reservations, E – Governance, supply – chain, Management, manufacturing, retailing and online – publishing.
November	<u>SECTION-D</u> E – Commerce in India: EDI service providers in India, EDI Projects in the Government regulatory agencies. The Internet in India, laws for E – Commerce in India.

Prescribed Book

Book Name – E-Commerce

Author – Sartaj Singh

Publisher –ABS Publications