

VEER KUNWAR SINGH UNIVERSITY , ARA
BACHELOR OF COMPUTER APPLICATIONS (BCA)
DETAIL COURSE STRUCTURE & SYLLABUS

SEMESTER – I

Group A : (Theory Group) Theory papers to be examined by University through examination conducted at the end of Semester.

Sl. No.	Sem & Paper Code	Name of Subject	Full Marks	Pass Marks
1.	1BCA1	Fundamentals of Computer	100	40
2.	1BCA2	PC Packages (Win 98/XP, Word, Excel)	100	40
3.	1BCA3	Programming Logic & Design Techniques	100	40
4.	1BCA4	Programming in C	100	40
5.	1BCA5	Communicative English	100	40
		Aggregate Marks	500	225

Group B: (Practical & Continuous Evaluation) Sessional work papers to be evaluated internally, however during Computer Lab. Test atleast two external university examiners must be present. Evaluated answer sheet and marks shall be forwarded to the university, Controller of Examinations.

Sl. No	Sem & Paper Code	Name of Subject	Full Marks	Pass Marks
1.	1BCA6	Internal Assessment & Team Work	100	45
2.	1BCA7	Computer Lab - IV	100	45
4.	1BCA8	Professional Personality Skills	50	23
		Aggregate Marks	250	113

(a) Group-A (Theory Paper)

Full Marks : 500

Pass Marks : 225

(b) Group-B (Sessional Works)

Full Marks : 250

Pass Marks : 113

Aggregate Marks of Ist Semester : 750

Pass Marks : 338

1BCA1 Fundamentals of Computer	F.M. 100	P.M. 40	Time 3hrs
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MAJOR TOPICS:

- 1.Introduction**
- 2.Classification of Computer**
- 3.Data Representation**
- 4.Overview of Computer Architecture & Organisation**
- 5.Overview of File System**

Unit 1: Introduction – Data, Information, Importance of Data and Information, Information Society and Information Economy, Computing Technology, Definition of Modern Day Computers, History of Computing (Napier’s Bone, Pascal, Difference Engine) , Common Applications of Computer, Definition of Information System and Information Technology, Multimedia

Unit 2: Classification of Computer – Digital VS Analog Computer, Generation of Computer, General Purpose VS Special Purpose Computer, Micro Computer, Mini Computer, Mainframe Computer, Super Computer, Single User System, Multi User System

Unit 3: Data Representation – Number System-Binary,Octal,Decimal & Hexadecimal, Binary Arithmetic- 1’s and 2’s Complement, 9’s and 10’s Complement, Conversion of Number System, Binary Coded Decimal System, Alphanumeric Code System (ASCII, EBCDIC), Bit, Byte

Unit 4: Overview of Computer Architecture & Organisation – Definition of Computer Architecture, Definition of Computer Organization, Structural Components of Computer System (CPU, I/O, Main Memory, System Interconnection), Structural Components of CPU (CU, ALU, Registers, CPU Interconnection), Basic Block Diagram of Computer, Basic functions of Computer (Data Processing, Data Storage, Data Movement, Data Control), Major Components of Computer System (Hardware, Software), Types of Software - Application Software, System Software, Compiler, Interpreter and Assembler, Memory Organization - Registers, Cache, Primary and Secondary Memory, Memory associated Concepts – Tracks, Sectors, Seek Time, Latency Time, Access Time , RAM – Static RAM and Dynamic RAM, ROM, Input/Output Organization – Programmed I/O, Interrupt Driven I/O, DMA, Input Devices – Keyboard, Mouse, Joystick, Scanner, MICR, DMR etc. , Output Devices – Monitor, Printer (Impact, Non- Impact, Line, Dot Matrix, Laser, Drum, Chain Printer, etc.), Projector etc.

Unit 5: Overview of File System – Files, Directories, Types of files, Commands – Internal and External Commands, Concept of Path (Absolute & Relative Path), File Management Commands of some Common Operating Systems (Copy, Type, XCopy, Edit, Is, cd, md, cat, vi, etc.)

REFERENCE BOOKS

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|---|---|
| 1. Computer Today | by Suresh K Basandra., Pub. Galgotia |
| 2. Computer Fundamentals | by P.K. Sinha & Preeti Sinha, Pub. BPB |
| 3. Computer Fundamentals Architecture and Organisation
New Delhi | by B. Ram, Pub. Vikash Publication
House |
| 4. Peter Norton’s DOS Guide | by Peter Norton, Pub. PHI |
| 5. Fundamentals of Computer | by Arvind Kumar, Pub. Aarti |

		F.M.	P.M.	Time
1BCA2	PC Packages (Win 98/XP, Word, Excel)	100	40	3hrs

MAJOR TOPICS:

- 1. Introduction to PC Application Package**
- 2. Graphical User Interface – Operating System**
- 3. Windows Operating System – Different Versions/Types of Windows**
- 4. Document Creation and Word Processing**
- 5. Spreadsheet**

Unit 1: Introduction to PC Application Package – Definition and Example – Word Processing, Spreadsheet, DBMS, Presentation, CAD/CAM, Accounting

Unit 2: Graphical User Interface-Operating System – An Interface, Command Line User Interface, Graphical User Interface, GUI Components – Windows, Desktop, Icons and their types, Dialog Box, Menu, Command Button, Textbox, List Box, Radio/Option Button, Check Box, Spinner, Scroll Bar, Combo Box

Unit 3: Windows Operating System-Different Versions/Types of Windows – Windows 3.1x, Windows 95, Windows 98, Windows Me, Windows NT, Windows 2000, Windows XP, Basic Mouse Techniques- Click, Double Click, Point, Drag, Drag and Drop, Basic Keyboard Techniques – Closing Windows/ Application, Tasking help, Menu & its Convention – Dimmed Command, Ellipses, Check Mark, Short Cut Key, Control Menu and its options – Restore, Move, Size, Minimize, Maximize, Close, Switch to, Navigating in a Dialog Box, Working with File Manager/Windows Explorer, Creating Files, Directories, Folder, Searching for files and directories, Moving, Copying, Renaming files and directories, Associating files with applications, Formatting Floppy Disk and Hard Disk, Scandisk, Disk Defragmentation, Setting Desktop Environments, Printing, Applets of Windows – Notepad, MS Paint, WordPad, Calculator, Calendar, Character Map, Media Player, Users

Unit 4: Document Creation and Word Processing – An Introduction to Word Processing, Opening and Closing MS Word, The Menu Bar, Tool Bar (Tool Buttons), Opening, Closing & Saving Documents, Page Setup, Display/Hiding of Paragraph Marks and Inter Word Spaces, Formatting – Font, Size, Color, Alignments, Indentation, Bullets and Numbering, Tab and its Settings, Changing Case, Handling Multiple Documents – Opening and Closing of Multiple Documents, Cut, Copy & Paste across the documents, Saving the Clipboard, Moving around a document, Document Template, Table Manipulation, Mail Merge, Macro, Printing

Unit 5: Spreadsheet – Opening Spreadsheet (Excel), The Menu Bar, Tool Bar (Tool Buttons), Context Sensitive help, Introduction to Common Applications associated with Spreadsheet – Calculation of Taxes, Sales Analysis, Financial Account, Product Scheduling, Sale Involving, Statistical Analysis and Budgeting, Concepts – Workbook, Worksheet, Cell, Cell Pointer, Cell address, Cell Range, Moving around Worksheet, Entering Data – Text, Numbers, Data Formula, Referencing–Relative, Absolute, Mixed, Editing, Specifying a Range, Formatting, Data fill, Sorting and Filtering, Form, Insertion of rows, Columns, Sheets, Changing Width of rows and columns, Chart, Functions - Mathematical Functions, Logical Functions, Statistical Functions, String Functions, Financial Functions, Database Functions, Date and Time Functions, Macro, Analysis Tools – Goal Seek, Solver, Scenario, Printing, Merging Cells

REFERENCE BOOKS

- | | |
|---|----------------------------|
| 1. Learning Windows 98 Step by Step | by Rajeev Mathur, Pub. BPB |
| 2. Windows 2000: The Complete Reference | by Vens, Pub. TMH |
| 3. Using Microsoft Office 2000/XP | by Batt, Pub. PHI |

	F.M.	P.M.	Time
1BCA3 Programming Logic & Design Techniques	100	40	3hrs

MAJOR TOPICS :

- 1. Introduction**
- 2. Mathematical Preliminaries**
- 3. Algorithm Specifications & Performance Analysis**
- 4. Programming Concepts**
- 5. Software Development Methodology**

Unit 1: Introduction – Origin and definition of the term “ALGORITHM” , Euclid’s Algorithm, Features of Algorithm – Finiteness, Definiteness, Input, Output, Effectiveness

Unit 2: Mathematical Preliminaries – Mathematical Induction, Numbers, Power and Logarithms, Sum & Products, Integer Functions and Elementary Number Theory, Permutations and Factorials, Binomial Coefficients, Harmonic Numbers, Fibonacci Numbers, Matrices

Unit 3: Algorithm Specifications & Performance Analysis – Pseudocode, Flowchart Performance Analysis – Space Complexity, Time Complexity, Asymptotic Notation – Big “Oh” , Omega, Little Omega

Unit 4: Programming Concepts – Programming Elements – Variables, Constants, Datatypes, Arrays, Expression, Statements, Control Structure – Sequence, Selection, Iteration, Subroutines and Functions

Unit 5: Software Development Methodology – Conventional Programming Techniques – Structural Programming, Recursive Programming, Object Oriented Programming

REFERENCE BOOKS

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|--|---|
| 1. Fundamentals of Information Technology Publishing | by Alexis Leon & Mathew Leon
Pub. Vikas House, New Delhi |
| 2. Program Design | by Peter Juliff, Pub. PHI |
| 3. ‘O’ Level Programming Concept & Systems | by V.K. Jain, Pub. BPB |
| 4. How to Design Program – An Introduction to
Programming and Computing | by Kelleison, Pub. PHI |
| 5. How to Solve it by Computer | by Dromy, Pub. PHI |

1BCA4	Programming in C	F.M. 100	P.M. 40	Time 3hrs
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MAJOR TOPICS :

- 1. Introduction to C Language**
- 2. C Vocabulary**
- 3. Data Types**
- 4. Control Structures**
- 5. Array**
- 6. Functions**
- 7. Storage Class**

Unit 1: Introduction to C Language –

- (a) History, Program Development – Coding, Compilation, Linking, Running
- (b) Important features of C Language – Structured Programming – High/Middle/Low Level, Case Sensitiveness, Character Set, Block Structure
- (c) Different version of C Compilers

Unit 2: C Vocabulary – Keywords, Operators- Arithmetic, Logical etc. , Operators Precedence and Associativity, Library Functions and their header files

Unit 3: Data Types – Kinds, Range and Size, Memory Variables, Constants, Basic Data type Modifiers

Unit 4: Control Structures – Control Structure – if, if else, switch, for, while, do-while

Unit 5: Array – 1 D Array, 2D Array, 3D Array, Multi Dimensional Array, String Array

Unit 6: Functions – Declaration, Definition, Calling, Making a library functions

Unit 7: Storage Class – Storage Class Modifiers

REFERENCE BOOKS

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|-----------------------|--|
| 1. Programming in C | by E. Balaguruswamy, Pub. TMH |
| 2. Programming with C | by Gottfried, Schaums Outline Series, Pub. TMH |
| 3. Thinking in C | by Mahapatra, Pub. PHI |

		F.M.	P.M.	Time
1BCA5	Communicative English	100	40	3hrs

The main objective of this course is to improve proficiency in English by developing skill in reading, writing, listening, speaking and composition. The different kinds of composition included are - paragraphs, expository, composition, narrative composition, descriptive composition, narrative composition, descriptive composition, notes, reports and summaries.

Writing Skills :

1. Business Letters (Correspondence)
2. Interpretation of various charts and graphs
3. Vocabulary Building
4. Paragraph Writing / Expansion of ideas / Comprehension
5. Reportage

Speaking Skills :

6. Basic Sentence Patterns
7. Narrating Stories with the help of hints
8. Describing some incidents (hints minimised)
9. Conversation, Debating, Group Discussion
10. Extempore Topics for Speech

REFERENCE BOOKS

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|------------------------------------|---|
| 1. English Grammar | by Rein & Martin |
| 2. Effective English Communication | by Mohan Krishna, Dr. Raman & Meenakshi, Pub. TMH |
| 3. English Conversion Practice | by Dixon, Pub. PHI |

SEMESTER – II

Group A : (Theory Group) Theory papers to be examined by University through examination conducted at the end of Semester.

Sl. No.	Sem & Paper Code	Name of Subject	Full Marks	Pass Marks
1.	2BCA1	Digital Computer Organisation	100	40
2.	2BCA2	Advance Programming in C	100	40
3.	2BCA3	Fundamental Data Structure	100	40
4.	2BCA4	Application Programming in FoxPro	100	40
5.	2BCA5	Financial Accounting	100	40
		Aggregate Marks	500	225

Group B: (Practical & Continuous Evaluation) Sessional work papers to be evaluated internally, however during Computer Lab. Test atleast two external university examiners must be present. Evaluated answer sheet and marks shall be forwarded to the university, Controller of Examinations.

Sl. No	Sem & Paper Code	Name of Subject	Full Marks	Pass Marks
1.	2BCA6	Internal Assessment & Team Work	100	45
2.	2BCA7	Computer Lab - IV	100	45
3.	2BCA8	Minor Summer Assignment	100	45
4.	2BCA9	Professional Personality Skills	50	23
		Aggregate Marks	350	158

(a) Group-A (Theory Paper)

Full Marks : 500

Pass Marks : 225

(b) Group-B (Sessional Works)

Full Marks : 350

Pass Marks : 158

Aggregate Marks of IInd Semester : 850

Pass Marks : 383

		F.M.	P.M.	Time
2BCA1	Digital Computer Organisation	100	40	3hrs

MAJOR TOPICS:

- 1. Introduction to Digital Computers**
- 2. Binary Numbers, Codes and Arithmetic**
- 3. Digital System Algebra**
- 4. Combinational Switching Circuit**
- 5. Flip-Flop, Registers and Counters**
- 6. Digital Memory Systems**
- 7. Basic Machine Organization**

Unit 1: Introduction to Digital Computers – Digital Computer VS Analog Computer, Characteristics of Digital Computer

Unit 2: Binary Numbers, Codes and Arithmetic – Number System, Conversion, Binary Addition and Subtraction, Complement Representation of numbers, Addition / Subtraction of numbers in 1's and 2's Complement Notation, Binary Multiplication and Division, Binary Coded Decimal Numbers, Floating Point Arithmetic

Unit 3: Digital System Algebra – Postulates of Boolean Algebra, Basic theorems of Boolean Algebra, Boolean Functions and Truth Tables, Different forms of Boolean Functions, Logic Gates, Simplifying Boolean functions, Karnaugh Map (K- Map)

Unit 4: Combinational Switching Circuit – Combinational Circuit Design Procedure, Binary Operators and Logic Gates, Integrated Circuits and NAND, NOR Gates, Realization of Boolean Expression with NAND Gates, Some common Combinational Circuits used in Digital Systems

Unit 5: Flip-Flop, Registers and Counters – Basic Sequential Circuit and types, Sequential Circuits - Flip-Flops, Counters, Counter Decoders, Controlled Counters, Shift Registers, Push-Down Stack, Transfer of information between Registers, Single Shot Trigger

Unit 6: Digital Memory Systems – Memory Parameters, Characteristics of Magnetic Cores, Semiconductor, Random Access Memory, Read Only Memory, Content Address Memory

Unit 7: Basic Machine Organization – Storage Organization, Instruction and Data representation, CPU Organization, I/O Organization, Basic Instruction Set, Base Registers, Instruction Formats

REFERENCE BOOKS

- | | |
|---|---------------------------------|
| 1. Computer System and Architecture (3rd edition) | by M. Mano, Pub. PHI |
| 2. Computer Organisation & Design | by Pal & P. Chaudhari |
| 3. Introduction to Digital Computer Design | by V. Rajaraman & Radhakrishnan |
| 4. Computer Organisation and Architecture | by W. Stalling |
| 5. IBM PC and Clone Hardware Troubleshooting | by Govind Rajalu |

2BCA2	Advance Programming in C	F.M. 100	P.M. 40	Time 3hrs
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MAJOR TOPICS:

- 1. Abstract Data Type**
- 2. Pointers**
- 3. Function Revisited**
- 4. File Handling**
- 5. Basic Operations**

Unit 1: Abstract Data Type – Structure and Union

Unit 2: Pointers – Declaring Pointer, Assigning address to Pointer, Size of Pointer, Types of Pointer, Pointers and Array, String manipulation, Array of Pointers

Unit 3: Function Revisited – Function Call, Recursion, Call by Value, Call by Reference, Variable number of arguments, Command line arguments

Unit 4: File Handling – Opening, Closing and Processing files and Library functions

Unit 5: Basic Operations – Bitwise Operators - >> , << , ! , & , || - and their applications

REFERENCE BOOKS

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|-------------------------------------|-------------------------|
| 1. Turbo C : The Complete Reference | by H. Schildt |
| 2. Programming in C | by S. Kochan |
| 3. C Programming | by Kernighan & Ritchi |
| 4. Spirit of C | by Moolish Kooper |
| 5. Application Programming in C | by Johnson Baugh & Kalm |

		F.M.	P.M.	Time
2BCA3	Fundamental Data Structure	100	40	3hrs

MAJOR TOPICS :

- 1. Introduction to Data Structure**
- 2. List**
- 3. Stack**
- 4. Queue**
- 5. Tree**

Unit 1: Introduction to Data Structure – Array – A Data Structure (Concept), Linear and Non – Linear Data Structure, Memory Allocation Technique - Static and Dynamic, Deallocation of Memory

Unit 2: List – Sequential List, Linked List, Single, double & Circular Linked List, Insertion, Beginning, Middle, End, Modification, Deletion, Searching, Traversing and Merging Linked List, Representing Polynomial equations using Linked List

Unit 3: Stack – Sequential, Linked, Push, Pop, Display, Infix, Postfix and Prefix notation of Arithmetic expression using Stack, LIFO, FIFO

Unit 4: Queue – Sequential, Linked, Insertion, Deletion, Display, LIFO, FIFO

Unit 5: Tree – Sequential and Linked representation, Binary Search Tree, Insertion, Traversing (In Order, Pre Order, Post Order) respectively and non-respectively, Deletion in B.S.T. , Concept – AVL Tree, Threaded Binary Tree, B-Tree, Representing Arithmetic expression using Binary Tree

REFERENCE BOOKS

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|---|--|
| 1. Data Structure | by Sahani |
| 2. Data Structure Through C | by Y. Kanetkar |
| 3. Data Structure and Programming Design in C (2 nd Ed.) | by Kruse, Pub. PHI |
| 4. Data Structure Using C | by Terenboum, Langsom & Augenstein
Pub. PHI |

		F.M.	P.M.	Time
2BCA4	Application Programming in FoxPro	100	40	3hrs

MAJOR TOPICS :

- 1. Introduction**
- 2. FoxPro Database Management Utilities**
- 3. Memory Variable & Functions**
- 4. Programming in FoxPro**
- 5. Exceptional Conditions**

Unit 1: Introduction – FoxPro – An Introduction, Concept of DBMS and RDBMS, Files, Tables, Records, Fields

Unit 2: FoxPro Database Management Utilities – FoxPro Working Environments, Creating, Viewing, Editing & Deleting table structure and its contents, Sorting and Indexing database files, Reports and Labels

Unit 3: Memory Variable & Functions – Creating and Using Memory Variables and Arrays, Saving and Restoring Memory Variables, Setting Environments Commands, Time and Date Functions, Mathematical Commands and Functions, Datatype Conversion Functions, Macros, Character Functions

Unit 4: Programming in FoxPro – Creating a Program File, Performing Input/Output, Control Structure - IF, SCAN, FOR, DO, WHILE, TEXT, Following Modular Approach – Functions & Procedures, Programming with Multiple Database Files, Programming with Multiple Program Files in a Project, Creating Program Interface – Boxes, Windows, Menus, and Pop Ups, Key trapping and manipulation, File Manipulation Functions

Unit 5: Exceptional Conditions – Different Error Conditions, Locating Errors, Common Error Messages, Error debugging techniques

REFERENCE BOOKS

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|--------------------------------------|--------------------------|
| 1. FoxPro Made Simple | by R.K. Taxali, Pub. BPB |
| 2. Mastering FoxPro | Pub. BPB |
| 3. FoxPro for Windows Inside and Out | by Jones, Pub. THM |

2BCA5	Financial Accounting	F.M. 100	P.M. 40	Time 3hrs
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MAJOR TOPICS :

- 1. Introduction to Accounting**
- 2. Voucher**
- 3. Accounting Group**
- 4. Account Books**
- 5. Accounting Information & Reports**

Unit 1: Introduction to Accounting – What is Accounting? Difference between Accounting and Book Keeping, Advantages of Accounting, System of Financial Accounting, Classification of Accounting Rules of Debit and Credit, Manual VS Computerized Accounting

Unit 2: Voucher – Receipt & Payment Voucher, Journal Voucher, Sale & Purchase Voucher, Debit and Credit Note, Reverse Journal and Memo Voucher

Unit 3: Accounting Group – Groups & Subgroups, Primary & Secondary Cost Centre

Unit 4: Account Books – Cash / Bank Book, Journal, General Ledger, Memorandum, Register, Sales Register, Purchase Register, Day Book

Unit 5: Accounting Information & Reports – Trial Balance, Profit & Loss, Balance Sheet, Ratio Analysis, Cash Flow, Fund Flow, Statements of Accounts, Negative Ledger, Overdue Payables, Adjustment

REFERENCE BOOKS

- | | |
|---|----------------|
| 1. Book Keeping and Accounting | by M.G. Palkar |
| 2. Financial Management | by Khan & Jain |
| 3. The Essence of Financial Accounting | by Chandwick |
| 4. The Essence of Management Accounting | by Chandwick |

SEMESTER – III

Group A : (Theory Group) Theory papers to be examined by University through examination conducted at the end of Semester.

Sl. No.	Sem & Paper Code	Name of Subject	Full Marks	Pass Marks
1.	3BCA1	Information Technology Trend	100	40
2.	3BCA2	GUI Programming in Visual Basic	100	40
3.	3BCA3	Database Management System	100	40
4.	3BCA4	Computer Networking & LAN	100	40
5.	3BCA5	Management Skills	100	40
		Aggregate Marks	500	225

Group B: (Practical & Continuous Evaluation) Sessional work papers to be evaluated internally, however during Computer Lab. Test atleast two external university examiners must be present. Evaluated answer sheet and marks shall be forwarded to the university, Controller of Examinations.

Sl. No	Sem & Paper Code	Name of Subject	Full Marks	Pass Marks
1.	3BCA6	Internal Assessment & Team Work	100	45
2.	3BCA7	Computer Lab - IV	100	45
4.	3BCA8	Professional Personality Skills	50	23
		Aggregate Marks	250	113

(a) Group-A (Theory Paper)

Full Marks : 500

Pass Marks : 225

(b) Group-B (Sessional Works)

Full Marks : 250

Pass Marks : 113

Aggregate Marks of IIIrd Semester : 750

Pass Marks : 338

3BCA1	Information Technology Trend	F.M. 100	P.M. 40	Time 3hrs
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MAJOR TOPICS:

- 1. Information System - Hardware**
- 2. Information System - Software**
- 3. Software Engineering**
- 4. Operating System**
- 5. Networking Concept**

Unit 1: Information System-Hardware – The Computer Structure Architecture, The Memory System, I/O Technology, Selection of Computer System, Communicating System Hardware

Unit 2: Information System-Software – Software, The System Software, File System, Directory Structure, Networking Software, Network Security, Graphical User Interface, Application Softwares

Unit 3: Software Engineering – Define and Taxonomy, Software Development Paradigms, Requirement Analysis and Specification, Design Strategies, Design Tools and Diagramming Aids, Design Concepts, The Relationship between Analysis and Design and How to make the Transition, Various Design Methodologies

Unit 4: Operating System – An Overview of Operating System, Distributed Operating System, Processor Management, I/O File Management

Unit 5: Networking Concept – Data Communication Concept, Classification – Serial , Parallel, Simplex, Duplex, Half Duplex, Communication Media –Wire, Microwave, Internet, Intranet(Basic Concept), Hardware / Software, Components required for LAN, Topologies, Protocols (Introduction), OSI Layers (Introduction)

REFERENCE BOOKS

- | | |
|------------------------|---------------|
| 1. Computer Networking | by Tanaumbaum |
| 2. Operating System | by Godbole |
| 3. Digital Electronics | by Bartee |

3BCA2	GUI Programming in Visual Basic	F.M. 100	P.M. 40	Time 3hrs
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MAJOR TOPICS:

- 1. Introduction**
- 2. Visual Basic Controls**

- 3. Declaring and Using Memory Space**
- 4. Control Structure**
- 5. Procedures & Functions**
- 6. Exception Handling**
- 7. File and Database Handling**
- 8. Object Oriented Programming**
- 9. VB Project Deployment**

Unit 1: Introduction – Visual Basic, A Rapid Application Development Tool, Integrated Development Environment of Visual Basic, Concept of Object Oriented and Event Driven Programming, History of Visual Basic

Unit 2: Visual Basic Controls – Concept of Control / ActiveX Control, Label, Textbox, Command Button, Option Button, Check Box, List Box, Combo Box, Slider Control, Image, Picture, Scroll Bar, Clock, File, Directory, Drive, Timer, Tab Strip, Flex Grid, Dialog Control, Introduction with important properties, Methods and Events, Menu Editor, Tool Bar, Designing interface using Controls, Menu and Tool Bar

Unit 3: Declaring and Using Memory Space – Variables, Data Types, Scope of Variables, Local and Global Variables, Static Variables, Constants, Array, Dynamic Array

Unit 4: Control Structure – Sequence, Selection and Iteration Structure, Selection and Control Statement

Unit 5: Procedures & Functions – Creating and Working with Event Driven Module, Creating and Using Sub Module and Function Module, Module, Call by Value, Call by Reference, Recursion, Library Functions – String, Date & Time, Mathematical and Financial, Type Conversion

Unit 6: Exception Handling – Introduction to Exceptional situations – Design Time, Compile Time, Run Time Errors, Exception handling techniques

Unit 7: File and Database Handling – Introduction to different file organizations, File related controls, Objects and Properties, Working with Sequential access file, Working with Random Access File, Working with DBMS in VB, Report generation in VB

Unit 8: Object Oriented Programming – The concept of Abstraction and Encapsulation Class, Object, Class Module VS Standard Module, Creating and using Classes, Implementing Polymorphism in Visual Basic, Introduction to creating ActiveX Control

Unit 9: VB Project Deployment – Making an exe. file, Package and Deployment Wizard

REFERENCE BOOKS

- | | |
|--|--------------------------------|
| 1. Learn Microsoft Visual Basic 6.0 Now | by Haivorson, Pub. PHI |
| 2. Visual Basic 6.0 from Scratch | by Donald and Oancea, Pub. PHI |
| 3. Visual Basic 6.0 (2 nd Ed.) | by Ralmet, Pub. TMH |
| 4. MCSD, Visual Basic 6.0 Distributed Applications | by Syngress, Pub. TMH |
| 5. Teach Yourself Visual Basic 6.0 | by Warner, Pub. TMH |

		F.M.	P.M.	Time
3BCA3	Data Management System	100	40	3hrs

MAJOR TOPICS :

- 1. Introduction**
- 2. Data Models**
- 3. Relational Data Model , Implementation & Manipulation**
- 4. Normalization**
- 5. Database Security**
- 6. Future Trends in DBMS**

Unit 1: Introduction – Introduction to Database Management System, File Systems and Associated Problems, Advantages and Disadvantages of DBMS, Component / Structure of DBMS, Different Data Models, Introduction of Relational, Hierarchical, Network & Object Oriented Model

Unit 2: Data Models – Concept of Entities, Attributes, Association and Relationship, Entity Relationship Model, Drawing ER Diagram, Data Architecture, Generalization, Specialization, Aggregation, Anti – Sparc Model (Three level Architecture)

Unit 3: Relational Data Model , Implementation & Manipulation – Concepts of Attributes, Domains, Tuples and Cardinality, Keys, Introduction to Codd's rules, Introduction to Relational Algebra and Relational Calculus, SQL (Structure Query Language) - DDL, DML, DCL, DQL, TCL, Introduction to QUEL, Introduction to RQBE

Unit 4: Normalization – Relational database design issue, Anomalies in Database, Introduction to Functional Dependency, Normalization – 1NF, 2NF, 3NF, BCNF, 4NF, 5NF, Normalization through Synthesis

Unit 5: Database Security – Different Security Policies- Authorization, Identification, Authentication, Encryption, Decryption, Integrity rules and Constraints, Auditing, Introduction to Database recovery mechanism

Unit 6: Future Trends in DBMS – Concept of Distributed System, Knowledge based System, Expert Database System, Object Database System

REFERENCE BOOKS

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|---|----------------------------|
| 1. Introduction to Database Systems | by C.J. Date |
| 2. Data Base System Concept | by Korth |
| 3. Principles of Database Management | by James Martin |
| 4. Computer Database Organization | by James Martin |
| 5. Relational Database Design For Micro Computer Applications | by Prentice Hall (Jackson) |

		F.M.	P.M.	Time
3BCA4	Computer Networking & LAN	100	40	3hrs

MAJOR TOPICS :

- 1. Introduction to Computer Network**
- 2. Network Structure**
- 3. Network Architecture**
- 4. OSI Reference Model**
- 5. Transmission Media**
- 6. Transmission & Switching**
- 7. Broadcast Networks & their Protocols**

Unit 1: Introduction to Computer Network – Computer Network and Uses, Network Goals, Application of Networks

Unit 2: Network Structure – Hosts – Communication Subnet, IMPS, Point-to-Point Channels & Different Topologies of Point-to-Point Channels, Broadcast Channels

Unit 3: Network Architecture – Protocol Hierarchies, Peer Process

Unit 4: OSI Reference Model – Different layers of OSI Model, Connection Oriented and Connection less Services

Unit 5: Transmission Media – Magnetic Media, Twisted Pair, Baseband, Co-axial Cable, Fiber Optics, Communication Satellites

Unit 6: Transmission & Switching – FDM and TDM, CKT Switching, Packet Switching, Hybrid Switching, ISDN

Unit 7: Broadcast Networks & their Protocols – CSMA / CD, CSMA / CA, Ethernet (802.3), Types of Ethernet Cables, Token Bus (802.4), Token Ring (802.5), WAN Repositories, Bridges, Routers, Gateways, FDDI Backbones, TCP/IP

REFERENCE BOOKS

- | | |
|---|----------------------|
| 1. Essentials of Networking | Pub. Microsoft Press |
| 2. Electronic Version of Documentation of WIN 2000 and NOVELL 5.0 | |
| 3. Documentation of Linux Installation (Electronic Version) | |
| 4. Computer Networks | by Black U |
| 5. Computer Communication Network | by W. Stalling |

3BCA5	Management Skills	F.M. 100	P.M. 40	Time 3hrs
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MAJOR TOPICS :

- 1. Introduction to Management**
- 2. Evolution of Management Thought**
- 3. Planning**
- 4. Organising**
- 5. Leading**
- 6. Controlling**

Unit 1: Introduction to Management – Definition, Nature & Scope, Concepts of Management, Administration & Organisation, Management Process and Levels of Management

Unit 2: Evolution of Management Thought – Contribution of F.W. Taylor, Henri Fayol, Peter F. Drucker, Henry Mintzberg, Tom Peter, etc.

Unit 3: Planning – Scope, Importance, Limitations, Procedure of Planning, Types of Planning, Mission Objective Policy, Strategy, Procedure & Rules, Strategic & Tactical Planning

Unit 4: Organising – Procedure & Principles, Span of Control, Concepts of Authority and Responsibilities, Delegation & Decentralization Line, Staff & Functional Authority, Types of Organisation Structure

Unit 5: Leading – Leadership Theories, Traits & Styles, Motivation – Theories of Maslow, Mc Gregor, Herzberg, Mc Clelland, Porter and Lawler Model

Unit 6: Controlling – Process & Types of Control

REFERENCE BOOKS

- | | |
|--|--------------------------|
| 1. Essentials of Management | by Harold Kantz Weihrich |
| 2. Principles & Practice of Management | by Saxena |
| 3. Principles & Practice of Management | by Shejwalkar & Ghanekar |
| 4. Principles & Practice of Management | by Tripathi |
| 5. Management – Tasks, Responsibilities and Practice | by Peter & Drukar |

SEMESTER – IV

Group A : (Theory Group) Theory papers to be examined by University through examination conducted at the end of Semester.

Sl. No.	Sem & Paper Code	Name of Subject	Full Marks	Pass Marks
1.	4BCA1	Operating Systems	100	40
2.	4BCA2	OOPS Programming in C++	100	40
3.	4BCA3	Internet & E-Commerce	100	40
4.	4BCA4	Linux Operating Systems	100	40
5.	4BCA5	System Analysis & Data Processing	100	40
		Aggregate Marks	500	225

Group B: (Practical & Continuous Evaluation) Sessional work papers to be evaluated internally, however during Computer Lab. Test atleast two external university examiners must be present. Evaluated answer sheet and marks shall be forwarded to the university, Controller of Examinations.

Sl. No	Sem & Paper Code	Name of Subject	Full Marks	Pass Marks
1.	4BCA6	Internal Assessment & Team Work	100	45
2.	4BCA7	Computer Lab - IV	100	45
3.	4BCA8	Minor Summer Assignment	100	45
4.	4BCA9	Professional Personality Skills	50	23
		Aggregate Marks	350	158

(a) Group-A (Theory Paper)

Full Marks : 500

Pass Marks : 225

(b) Group-B (Sessional Works)

Full Marks : 350

Pass Marks : 158

Aggregate Marks of IVth Semester : 850

Pass Marks : 383

4BCA1 Operating System	F.M. 100	P.M. 40	Time 3hrs
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MAJOR TOPICS:

- 1.Introduction to Operating System**
- 2.Process Management**
- 3.Storage Management**
- 4.Processor Management**
- 5.File Management**
- 6.Device Management**

Unit 1: Introduction to Operating System – What is an Operating System, Functions of Operating Systems, Interaction of Operating System with hardware & user Programmes. Types of Operating Systems (Batch OS, Multiprogramming OS, Network OS, Distributed OS, Time Sharing OS), Structure of an Operating System.

Unit 2: Process Management – Definition of process, Process states, Process states Transition, The process control Block Operation of process (Suspend & Resume), Mutual Exclusion, Critical Section, Dekker's Algorithm, Semaphores, Deadlock, Indefinite Postponement, Necessary condition.

Unit 3: Storage Management – Storage Organisation, Management, Hierarchy, Management strategies, Contiguous & Non Contiguous storage Allocation, Single user Contiguous Storage Allocation, Variable Portion Multiprogramming, Virtual Storage, Paging, Segmentation, Combined paging & Segmentation System, Page Replacement, Strategies, Demand Paging, Page fault frequency, Page replacement.

Unit 4: Processor Management – Scheduling Levels, Scheduling Criteria, Pre-emptive VS Non Preemptive Scheduling, Interval Timer, Priorities, FIFO Scheduling, RR Scheduling, SJFS Scheduling, SRT Scheduling

Unit 5: File Management – File Concept Directories. Directory Structure in DOS. Moving, Renaming, Copying Deleting and undeleting files under DOS, Disk Organisation, Disk Scheduling

Unit 6: Device Management – Control of Various Devices, Device Drivers, Interrupt driven or Poll driven data transfer, Need of Software & hardware Protocols

REFERENCE BOOKS

- | | |
|--------------------------------------|------------------------------|
| 1. Operating System Concepts | by Abraham silberschatz, TMH |
| 2. Operating System Concept | by Peterson |
| 3. Operating System Concept & Design | by Milenkovic, pub TMH) |

	F.M.	P.M.	Time
4BCA2 OOPS Programming in C++	100	40	3hrs

MAJOR TOPICS:

- 1. Introduction to Object Oriented Program Concepts**
- 2. Fundamentals of C++ Programming**
- 3. Constructors and Destructors**
- 4. Overloading**
- 5. Inheritance**
- 6. Virtual Functions**
- 7. Streams**
- 8. Templates**
- 9. Exception Handling**

Unit 1: Introduction to Object Oriented Concepts – Inheritance, Class, Objects, Polymorphism, Overloading, Dynamic Binding, Advantages of OOP, Object Oriented Analysis and Design

Unit 2: Fundamentals of C++ Programming- History of C++, Structure of a C++ Program, Declaration of Class and Object-Definition, Declaration of members, Objects as datatypes, Objects as function arguments, Structures & Classes, Basic Datatypes, User defined datatypes, Variable & Constants, Dynamics initialization of variables, Reference Variables, Enumerated Variable, Operators and Expressions, Coding Central Construct, Sequence, Selection, Iteration, Arrays and Strings, Input & Output mechanisms: cin, out. Concepts of functions, Declaration, Calling, Definition, Scope rules of members of Class, Data and type Conversion between basic types, between objects and basic types, between objects of different Classes, Limitations of type Conversion

Unit 3: Constructors and Destructors- Basic Constructors, Parameterized Constructors, Constructors with default arguments, Dynamic initialization of Objects, Copy Constructors, Destructors, Limitations of Constructors and Destructors

Unit 4: Overloading- Function Overloading, Operator Overloading, Unary, Binary

Unit 5: Inheritance- Derived Classes and base Classes, Access specifiers, Derived Class Constructors, Member functions overriding, Types of inheritance- Public and Private, Multiple inheritance

Unit 6: Pointers and Virtual Functions- Pointers Concepts, Pointers to Objects, Memory Management using new and delete Operators, Virtual functions and polymorphism, Static functions, Macros and inline function

Unit 7: Streams- Streams Classes- hierarchy, header files, Stream manipulators, String Stream, Character Streams, File Streams Object I/O, Disk I/O with member function

Unit 8: Templates- Function templates, Class templates

Unit 9: Exception Handling- Try block, Catch handler, Throw Statement, Exception specification

REFERENCE BOOKS

- | | |
|--|---------------------------|
| 1. C++ The Complete Reference | by H.Schildt TMH Pub. |
| 2. C++ | by Balaguruswami TMH Pub. |
| 3. C++ and Object Oriented Programming Paradigm | by Jana Pub, PHI |
| 4. Introduction to Object Oriented Programming and C++ | Pub. BPB |

	F.M.	P.M.	Time
4BCA3 Internet & E-Commerce	100	40	3hrs

MAJOR TOPICS :

- 1. Internet Concept**
- 2. Internet Implementation**
- 3. Electronic Commerce and Banking**
- 4. Electronic Commerce and Retailing**
- 5. Electronic Commerce and Online Publishing**

Unit 1: Internet Concept- What is Internet, How it is different from Internet, Groupware, Feature of Internet-Cheaper, Flexible, Versatile, Data transmission in Ethernet, Platform for Internet, Network Topologies, Servers(NT/NOVELL/LINUX), Client Workstation

Unit 2: Internet Implementation- Hardware, Software, Protocols for Internet, IP Network, HTTP Server, SMTP, POP3, IMAP4, LDAP, Document Server, Implementing Intranet Using Novell and Windows

Unit 3: Electronic Commerce and Banking- Requirements, Standards, Case Studies

Unit 4: Electronic Commerce and Retailing- Requirements, Standards, Case Studies

Unit 5: Electronic Commerce and Online Publishing- Requirements, Standards, Case Studies

REFERENCE BOOKS

- | | |
|--|------------------------|
| 1. Electronic Commerce : The Cutting Edge of Business | by Bajaj & Nag pub TMH |
| 2. E-Commerce Strategies | by Trepper, pub PHI |
| 3. The Internet Complete Reference | by Hahn, pub TMH |
| 4. E-Commerce Essentials with Microsoft
Front Page Version 2002 | by Holden, pub PHI |

4BCA4	Linux Operating System	F.M. 100	P.M. 40	Time 3hrs
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MAJOR TOPICS :

- 1.Introduction to System Software**
- 2.Introduction to Assembler**
- 3.Introduction to Compiler**
- 4.Introduction to OS**
- 5.Basics of LINUX**
- 6.File System & Concept of Blocks IQ LINUX**
- 7.Communication in LINUX**
- 8.Shell Programming**

Unit 1: Introduction to System Software- Introduction & types of Software

Unit 2: Introduction to Assembler- Types of translator, Assembler, Implementation, Macro and Macroprocessor, Loaders

Unit 3: Introduction to Compiler- Approaches to Compiler development, Compiler design phases, Software tools lex, Yacc

Unit 4: Introduction to OS- Operating System Structure- layered structure approach, Kernel approach, Virtual machine, Client – Server Model

Unit 5: Basics of Linux- History of Linux, Features of Linux System, S/W layers

Unit 6: File System & Concepts of block in LINUX- File System, Files & directories commands, Different types of files and directory permission, Other useful Commands, Disk related Command, Boot block, Super block, I/O redirection, piping, tree command, filters

Unit 7: Communication in LINUX- Process in LINUX, Background processes and foreground processes, Advantage and disadvantage of background process, running process in background, different process related commands, Communication in LINUX, Different Communication related commands- write, wall etc.

Unit 8: Shell Programming- vi editor, Shell variables, Keywords, Positional parameters, Passing Command line arguments, Control instruction etc.

REFERENCE BOOKS

- | | |
|---------------------------------------|---------------------------|
| 1.LINUX Administration Handbook | by Nemethal, pub PHI |
| 2.LINUX: The Complete Reference | by Peterson, pub TMH |
| 3.UNIX: Concept and applications | by Das, Sumitabh, pub TMH |
| Featuring sea UNIX and LINUX | |
| 4.Red Hat LINUX: Administrative Tools | by Fisher, pub TMH |

4BCA5	System Analysis and Data Processing	F.M. 100	P.M. 40	Time 3hrs
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MAJOR TOPICS :

- 1. Software life Cycle**
- 2. S/W Inspection**
- 3. System Analysis**
- 4. S/W Design**
- 5. User Interface Design**

Unit 1: Software life Cycle- Models: Waterfall, Spiral, Prototyping Fourth generation techniques, Software process, Software requirements specifications (SRS), Fact-finding Techniques, Characteristics of a good SRS: Unambiguous, Complete Variable, Consistent, Modifiable, Traceable and Usable During the Operation and Maintenance phase, Prototype outline for SRS.

Unit 2: S/W Inspection- Communication skills for the System Analyst, Review/Inspection Procedure, Document, Composition of the inspection team, Check list, reading by the inspectors, recording of the defects and action recommended, Student should practice inspecting small requirement specifications for good characteristics.

Unit 3: System Analysis- SA tools and techniques, DFD, Entity Relationships Diagrams, Project Dictionary

Unit 4: S/W Design- System Design Tools and Techniques, Prototyping, Structured Programming

Unit 5: User Interface Design- Elements of Good Design, Design issues, Features of a modern GUI, Menus, Scrolling, Windows, Icons, Panels, Error messages etc.

REFERENCE BOOKS

1. System Analysis and Design Methods & Barlow
2. System Analysis and Design, 5th ed.

by Whitten, Bentley

by Kendall & Kendall pub PHI

SEMESTER – V

Group A : (Theory Group) Theory papers to be examined by University through examination conducted at the end of Semester.

Sl. No.	Sem & Paper Code	Name of Subject	Full Marks	Pass Marks
1.	5BCA1	Component Architecture and Programming (COM, DCOM)	100	40
2.	5BCA2	Multimedia Tools & Applications	100	40
3.	5BCA3	Programming in JAVA	100	40
4.	5BCA4	Oracle RDBMS	100	40
5.	5BCA5	Computer Centre	100	40
		Aggregate Marks	500	225

Group B: (Practical & Continuous Evaluation) Sessional work papers to be evaluated internally, however during Computer Lab. Test atleast two external university examiners must be present. Evaluated answer sheet and marks shall be forwarded to the university, Controller of Examinations.

Sl. No	Sem & Paper Code	Name of Subject	Full Marks	Pass Marks
1.	5BCA6	Internal Assessment & Team Work	100	45
2.	5BCA7	Computer Lab - V	100	45
3.	5BCA8	Professional Personality Skills	50	23
		Aggregate Marks	250	113

(a) Group-A (Theory Paper)

Full Marks : 500

Pass Marks : 225

(b) Group-B (Sessional Works)

Full Marks : 250

Pass Marks : 113

Aggregate Marks of Vth Semester : 750

Pass Marks : 338

	F.M.	P.M.	Time
5BCA1 Component Architecture Programming (COM, DCOM)	100	40	3hrs

MAJOR TOPICS:

- 1. COM & DCOM Basics**
- 2. Building Distributed, Scalable Applications with COM Part I**
- 3. Building Distributed, Scalable Applications with COM Part II**

Unit 1: COM & DCOM Basics – Definition, COM/DCOM Issues, Components, Persistence, Sharing and Scalability, Component and Object Technology, Implement Interfaces, Architecture of COM and DCOM

Unit 2: Building Distributed, Scalable Applications with COM Part I – Distributed Computing, Transactions and Databases, 1-Tier, 2-Tier, 3-Tier & Multi-Tier Architecture, Security

Unit 3: Building Distributed, Scalable Applications with COM Part II – Clustering, Message Queuing, Client-Server Software development, CORBA Component Model, Object Adapter, Middleware Standards

REFERENCE BOOKS

- | | |
|--|--|
| 1. COM Programming with Microsoft Net: | by Julian Templeman (TMCH) |
| 2. COM/DCOM Unleashed | by Randy Abernethy (Tech Media) |
| 3. COM/DCOM Primer Plus | by Waite Group's, John Cadman (Tech Media) |

	F.M.	P.M.	Time
5BCA2 Multimedia Tools and Applications	100	40	3hrs

MAJOR TOPICS:

- 1. Introduction**
- 2. Multimedia System**
- 3. Video Technology**
- 4. Video Compression**
- 5. Hardware Peripherals**
- 6. Multimedia & Internet**
- 7. Multimedia on Windows**

Unit 1: Introduction – Goal, Objective & Applications, Multimedia building blocks, Multimedia Hardware, Platform & Software tools, Authoring Tool

Unit 2: Multimedia System - File Format (BMP, GIF, PCX, etc.), Communication System & Multimedia Database

Unit 3: Video Technology – Animation Basics, Digital imaging (Still & Moving), Video Capture, Video Processing, Video recovery techniques, AVO & AVI file formats, Conferencing techniques, Video Streaming, Video Technology, Motion of Synchronization

Unit 4: Video Compression – LZW, OCT Coding, JPEG, MPEG, Hypertext & Hypermedia, SGMI, ODA, MHEG, Document Architecture

Unit 5: Hardware Peripherals – Connection, Memory & Storage devices, Input & Output devices, Communication devices

Unit 6: Multimedia & Internet – Design WWW

Unit 7: Multimedia on Windows – Multimedia function calls, Windows supports for sound, Animation movies, music & midi controls

REFERENCE BOOKS

- | | |
|--|-------------------------------------|
| 1. Multimedia: Computing, Communication and applications | by Ralf Steinmetz & Klara Nahrstedt |
| 2. Multimedia, Making It Work | by Tay Vaughan |
| 3. Multimedia in Practice : Technology and Applications | by Judith Jeffcoate, Pub. PHI |

	F.M.	P.M.	Time
5BCA3 Programming in JAVA	100	40	3hrs

MAJOR TOPICS :

1. Applet As JAVA Applications
2. Abstract Windows Toolkit and Event handling in JAVA
3. Multithreading
4. Swing libraries
5. Input/Output using streams
6. Introduction to Networking with JAVA
7. JDBC
8. JAVA Beans & EJB

Unit 1: Applet As JAVA Applications – Applets specific methods and Related HTML references, Creating an Applet, Displaying it using Web Browser with an Applet viewer exe, Advantages and Disadvantages of Applet Vs Applications

Unit 2: Abstract Windows Toolkit and Event handling in JAVA – Components used in AWT, Basics of event handling and Individual events, AWT package

Unit 3: Multithreading – Introduction, Thread Classes & its methods, Thread priorities, Thread Synchronization

Unit 4: Swing libraries - The model view controller design pattern, Different layout menus, dialog boxes, Text input

Unit 5: Input/Output using streams – Introduction Files & Streams, Reading data from sequential access file, Updating sequential access file, Random access file, Class file, Buffered reader, Buffered writer classes

Unit 6: Introduction to networking with JAVA – Introduction, The URL Class, The Socket and Server-Socket Classes, Connecting to the Server, A simple Chat program

Unit 7: JDBC – The JAVA database connectivity standard, four different types of drivers and their advantages, JDBC-ODBC connectivity with MS-Access database, Three Tier Architecture

Unit 8: JAVA Beans & EJB – Introduction to EJB, Why Beans, How Beans are used the BDK, Beans Properties & Methods

REFERENCE BOOKS

1. Java Thread Programming
2. JAVA Beans Programming
3. Mastering Enterprise JavaBeans

by Paul Hyde
by Joseph O’Niel
by Ed Roman

		F.M.	P.M.	Time
5BCA4	Oracle RDBMS	100	40	3hrs

MAJOR TOPICS :

- 1. Introduction to the Relational Model**
- 2. Normalization and Query Processing**
- 3. Recovery, Concurrency Management and Database Security**

Unit 1: Introduction to the Relational Model - An overview of the Relational Model, Data Independence, ER Diagrams, Relational Algebra Operation, Referential Integrity and Database Integrity, SQL

Unit 2: Normalization and Query Processing – Functional Dependency, Normalization, Multivalued and Join Dependency, Query Processing

Unit 3: Recovery, Concurrency Management and Database Security – Reliability, Concurrency Management, Concurrency Control, Locking Scheme, Database Security, Integrity & Control, Practical on SQL Server

REFERENCE BOOKS

1. Oracle How – To Waite Group
2. Oracle 9i: The Complete Reference
3. OCP Oracle DBA Training Guide

Pub. BPB
by Kevin Loney & George Koch
by Baird, Pub. Techmedia Computer Books

4BCA5	Computer Centre Management	F.M. 100	P.M. 40	Time 3hrs
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MAJOR TOPICS :

- 1. Introduction**
- 2. Profile of an Entrepreneur**
- 3. Motivation process**
- 4. Group Dynamics**
- 5. Organizational design**
- 6. Leadership**

Unit 1: Introduction – What is Organization, Components of organization, Nature and Variety of Organization (in terms of objectives, structure etc.), importance of Organizational behavior in work situation, fundamental concept of OB, Different models of OB i.e. Neotratric, Custodial, Supportive, Collegial

Unit 2: Profile of an entrepreneur – Perception, Attitudes, Commitment, Values creativity and other personality factors, motives- primary, secondary (achievement, power, affiliation)

Unit 3: Motivation process – Intrapersonal conflict, defence mechanisms, study of selected theories of motivation – McGregor's theory X and Y, Abraham Malsow's theory of head hierarchy, Herzberg's two factor theory, Vector Vroom's expectancy theory

Unit 4: Group Dynamics – Formal and informal groups, types of groups, theories of group formation

Unit 5: Organizational design – Various Organizational Structures and their effects on human behavior, Organizational climate, Organizational Culture

Unit 6: Leadership – Definition, Importance of Organization, Different Styles of leadership

REFERENCE BOOKS

- | | |
|--|--|
| 1. Behavior in Organizations | by Jerald Greenberg & Robert A. Baron |
| 2. Management of Organizational Behavior :
Leading Human Resources, 8 th ed. | by Paul Hersey, Kenneth H. Blanchard
& Dewey E. Johnson |
| 3. Modern Organizations | by Amitai Etzioni |
| 4. Entrepreneurship and Small Business Management | by B.S. Bhatia & G.S. Batra |

SEMESTER – VI

This Semester comprises of only Major Project and Internal Assessment & Term Work. Both are to be evaluated internally in presence of atleast two External Examiners of University.

Sl. No	Sem & Paper Code	Name of Subject	Full Marks	Pass Marks
1.	6BCA1	Major Project	500	225
2.	6BCA2	Internal Assessment & Team Work	100	45
		Aggregate Marks	500	225

SUMMARY OF SEMESTER WISE DISTRIBUTION OF MARKS

Semesters	Group A Theory Paper Examined by University		Group B Sessional Work Evaluated Internally		Aggregate	
	F.M.	P.M.	F.M.	P.M.	F.M.	P.M.
I	500	225	250	113	750	338
II	500	225	350	158	850	383
III	500	225	250	113	750	338
IV	500	225	350	158	850	383
V	500	225	250	113	750	338
VI	Major Project		500	225	600	270
	Internal Assessment & Team Work		100	45		
Grand Total					4550	2048