FACULTY OF COMPUTER APPLICATION
CLASS: BCA SECOND YEAR

SUBJECT- PROGRAMMING WITH C++ AND DATA STRUCTURES
CODE- BCA(Y-201)

UNIT I

Introduction Procedural Vs Object Oriented Programming, Classes, Object, Data, Abstraction, Encapsulation, Inheritance, Polymorphism, Dynamic Binding, Message Passing, Object Oriented Languages, Object Based languages. **Basics of C++:** A Brief History of C++, Application of C++, Compiling & Linking, Tokens, Keywords, Identifiers & Constants , Basic Data Types, User-Defined Data Types, Symbolic Constant, Type Compatibility, Reference Variables, Operator in C++, Scope Resolution Operator, Member Dereferencing Operators, Memory Management Operators, Manipulators, Type Cast Operator. **Functions In C++:** The Main Function, Function Prototyping, Call by Reference Call by Address, Call by Value, Return by Reference, Inline Function, Default Arguments, Constant Arguments, Function Overloading, Function with Array.

UNIT II

Classes & Object: A Sample C++ Program with class, Defining Member Functions, Making an Outside Function Inline, Nesting of Member Functions, Private Member Functions, Arrays within a Class, Memory Allocation for Objects, Static Data Members, Static Member, Functions, Array of Objects, Object as Function Arguments, Friend Functions, Returning Objects, Constant member functions, Pointer to Members, Local Classes. **Constructor & Destructor:** Constructor, Parameterized Constructor, Multiple Constructors in a Class, Constructors with Default Arguments, Dynamic Initialization of Objects, Copy Constructor, Dynamic Constructor, Destructor.

UNIT III

Inheritance: Defining Derived Classes, Single Inheritance, Making a Private Member Inheritable, Multilevel Inheritance, Hierarchical Inheritance, Multiple Inheritance, Hybrid Inheritance, Virtual Base Classes, Abstract Classes, Constructor in Derived Classes, Nesting of Classes. Operator Overloading & Type Conversion , Polymorphism, Pointers, Pointers with Arrays C++, Streams, C++ Stream Classes, Unformatted I/O Operation, Formatted I/O Operation, Managing Output with Manipulators.

UNIT IV

Basic Idea of Data Structures: Introduction to Data Structure, Classification, Operations on Data Structure, Dynamic Memory Allocation. **Arrays**: Array Address Calculation, operations on array and its algorithms, Application of Arrays, Limitations, Sparse Matrix. **Stacks:** Introduction, Representation of Stack, Implementation, Applications of stack: Infix, Prefix, Postfix expressions, Conversion of Infix to Prefix and Postfix Expressions, Evaluation of Postfix expression using Stack. **Recursion:** Recursive Definition and Processes, Example of Recursion, Recursion Vs. Iteration. **Queues:** Introduction, Representation of Queue, Implementation, Circular Queue, Dequeue, and Priority Queue**.**

FACULTY OF COMPUTER APPLICATION
CLASS: BCA SECOND YEAR

UNIT V

Linked Lists: Linear List Concept, Linked List v/s Array, Linked List Terminology, Linked List Data Structure, Representation of Linked List in Memory, Types of Linked List: Simple, Circular, Doubly Linked List, Circular Doubly Linked List, Operations on Linked List: Creation, Traversing, Searching, Insert Node (Empty List, Beginning, Middle, End), Delete Node (First, General Case) Count, Sort List.

Introduction to Trees: Tree Terminology, Binary Tree, Types of Binary Tree, Representation of Binary Tree, Binary Tree Traversal (Inorder, Preorder, Postorder), Binary Tree Creation, Expression Tree, Binary Search Tree ,Insertion and Deletion in BST, Graph Terminology. **Sorting & Searching Techniques:** Bubble Sort, Selection Sort, Binary search and Sequential Search.

Textbooks & Reference books:

1. Herbert Schildt,"C++ The Complete Reference"
2. Kanetkar, "Let us C++"
3. E. Balagurusamy, "Object Oriented Programming with C++"
4. Seymour Liptsuz, "Data Structure"
5. Tannebaum, "Data Structure"
6. Y.P. Kanetkar, "Data Structure through C++"
7. Y. Langsam, M. Augenstin and A. Tannenbaum, ―Data Structures using C and C++, Pearson Education Asia,
8. Stanley Lippman & Lajoi, "C++ Primer"
9. Bjarne Stroustrup, "C++ Programming Language"

FACULTY OF COMPUTER APPLICATION
CLASS: BCA SECOND YEAR

SUBJECT- COMPUTER BASED NUMERICAL AND STATISTICAL TECHNIQUES
CODE- BCA(Y-202)

UNIT I

Computer Arithmetic: Floating Point representation of numbers and operations, normalization and their consequences, pitfalls in computing, errors in numbers.

Solution of algebraic and transcendental equations: Introduction, Bisection method, the method of false position (Regula Falsi), Newton-Raphson method, secant method, their algorithms & comparative study of all the methods.

UNIT II

Solution of simultaneous linear algebraic equations: Direct Method: Gauss elimination method, Gauss Jordan Elimination method. Iterative Method: Gauss seidel method, pivoting, Ill-conditioned equations.

Numerical Integration: General quadrative formula for equidistant ordinates, Trapezoidal Rule, Simpson's 1/3 rule, Simpson's 3/8 rule and their algorithms.

UNIT III

Interpolation & Extrapolation: Introduction, Finite Differences: Forward differences, backward differences, Interpolation with evenly spaced points: Newton's forward difference interpolation formula, Newton's backward difference interpolation formula.

Interpolation with unevenly spaced points: Lagrange's interpolation formula, Newton's divided difference interpolation formula.

UNIT IV

Numerical solution of ordinary differential equations: Introduction, Euler's method and algorithm, Euler's modified method, Taylor's series, Picard's method, Runge Kutta method of order 2 and its algorithm, Runge kutta method of order 4 and its algorithm.

UNIT V

Correlation & Regression : Correlation, definition, Utility, Types of Correlation, Karl Pearson's coefficient of correlation, shortcut method, step deviation method, merits and limitations of Karl Pearson's coefficient of correlation, Rank correlation coefficient,its merits and demerits.

Regression: Definition, Utility, Linear Regression lines: Freehand curve method, method of least squares, line of regression, regression coefficient and its properties.

Textbooks & Reference Books :

1. Shastri S.S., ―Introductory methods of Numerical Analysis, PHI.
2. Rajaraman V., ―Computer Oriented Numerical Methods, PHI.
3. Prahlad Tiwari – Numerical Analysis
4. Ray & Harswarup Sharma - Mathematical Statistics
5. H.C. Agarwal - Numerical Methods
6. Gupta & Kapoor – Fundamentals of mathematical statistics
7. Krishnamurthy - Computer based Numerical Algorithm

8. Salvadori - Computer Oriented Numerical Methods

SUBJECT- OPERATING SYSTEM
CODE- BCA(Y-203)

UNIT I

Introduction: Definitions, functions and types of operating system, System components, Operating system Structure, System Calls, System Programs, Interrupts, Microkernel .

Process Management: Process Concepts, Process states & Process Control Block, Process Scheduling: Scheduling Criteria, Scheduling Algorithms (Preemptive & Non- Preemptive) –FCFS, SJF, RR, Priority, Multiple-Processor, Real-Time, Multilevel Feedback Queue Scheduling.

UNIT II

Process Synchronization: Critical Section Problem, Semaphores, Classical Problems of Synchronization and their Solutions, Deadlock Characterizations, Method for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock

Memory Management: Introduction, Address Binding, Logical versus Physical Address Space, Swapping, Contiguous & Non-Contiguous Allocation, Fragmentation (Internal & External), Compaction, Paging, Segmentation

UNIT III

Virtual Memory: concept, Demand Paging, Performance of Demand Paging, Page Replacement Algorithms.

File Management: Concept of File System(File Attributes, Operations, Types), Functions of File System, Types of File System, Access Methods (Sequential, Direct & other methods), Directory Structure (Single-Level, Two-Level, Tree- Structured, Acyclic-Graph, General Graph), Allocation Methods (Contiguous, Linked, Indexed).

UNIT IV

Disk Management: Disk Scheduling Algorithms (FCFS, SSTF, SCAN, C-SCAN, LOOK), Swap Space Management, Disk Reliability, Recovery, Security: Security Threats, Protection, Trusted Systems, Windows Security.

UNIX : Introduction to UNIX, UNIX System Organization (the Kernel and the Shell), Files and Directories, Library Functions and System Calls, Editors (vi and ed). Introduction to the Concept of Open Source Software, Linux, Linux Architecture, Linux File System (inode, Super block, Mounting and Un-mounting), Essential Linux Commands, Kernel, Process Management in Linux, Signal Handling, System Call, System Call for Files, Processes and Signals

UNIT V

Shell Programming: Types of Shells, Shell Meta Characters, Shell Variables, Shell Scripts, Shell Commands, the Environment, Integer Arithmetic and String Manipulation, Special

Command line Characters, Decision Making and Loop Control, Controlling Terminal Input, Trapping Signals, Arrays, I/O Redirection and Piping, Vi and Emacs Editors, Shell Control Statements, Find, Shell Meta- Characters, Shell Scripts, Shell Keywords, Shell Procedures and Reporting, Handling Documents, Changing Process Priority with Nice, Scheduling of Processes at Command, cron, Batch commands.

Process Management and Process Synchronization: Command line argument, Background processes, process synchronization, Sharing of data, user-id, group-id, pipes, fifos, message queues, semaphores, shared variables, Coding, Compiling, Testing and Debugging. AWK programming – report printing with AWK.

Textbooks & Reference Books:

1. Abraham Silberschatz and Peter Baer Galvin, ―Operating System Concepts, Addison-Wesley.
2. Andrew Tanenbaum, ―Modern Operating Systems, Prentice Hall.
3. Harvey M. Deitel, ―An introduction to Operating Systems, Addison-Wesley.
4. Milan Milankovic, ―Operating Systems, Concepts and Design, TMH
5. William Stallings, ―Operating Systems: Internal and Design Principles, 3rd Edition, PHI.
6. Gary Nutt, ―Operating Systems, A modern Approach, Third Edition, Addison Wesley, 2004
7. D.M. Dhamdhere, ―Operating Systems: A Concept Based Approach. Second Edition, Tata McGraw-Hill, 2007.
8. Sumitabha Das ― Unix Concepts and Applications, TMH.
9. Yashwant Kanetkar ―Unix Shell Progamming, BPB.
10. Parata ―Advanced Unix–A Programmer‘s Guide, BPB.
11. Meeta Gandhi, ―The C Odyssey Unix– The Open Boundless C, BPB.

FACULTY OF COMPUTER APPLICATION
CLASS: BCA SECOND YEAR

SUBJECT- WEB TECHNOLOGY AND APPLICATION DEVELOPMENT USING .NET & C#
CODE- BCA(Y-204)

UNIT I

HTML - HTML Introduction, HTML Syntax, Head & Body Sections, Basic HTML Tags, Inserting, formatting, & modifying text, Lists – ol,ul & dl. Inserting images, hyperlinks, internal links. Working with tables: table tags & attributes. Form Controls – text field, textarea, radio button, checkbox, drop down list box, button etc.

UNIT II

Cascading Style Sheet – Introduction, merits, types, creating Divs with ID & Classes. CSS backgrounds, border, & box model.

Javascript - Overview, JavaScript vs. Java, Comments, Variables, Alertbox, Prompt & confirm. Expressions: Arithmetic operators, Assignment operators, Logical operators, Expressions and precedence, Statements: If statement, For statement, While statement, Break/Continue, Functions.

UNIT III

ASP.Net - Overview ofASP.NET framework, Installation of **Visual Studio**, ASP.NET Standard Controls & **Code in C#** for – Labels, Text box, Button, Link Button, Radio Button, Radio Button List, Check Box, Check Box List, Calendar control, Adrotator Control, File upload control. Running a web application, creating a multi-form web project.

UNIT IV

State management: Client side- Cookies, query string, hidden fields. Server Side-View state, Session state, Application state.

Form Validation: Client side validation, server Side validation, Validation Controls: Required Field, Comparison, Range, Regular Expression validator, validation summary and custom validation.

UNITV

Database Connection: SQL Server Database File, Configuring SQL Data Source Control, Connection Class, Command Class, Data Adapter Class, Dataset Class. Displaying data in data bound Controls and Data Grid.

Textbooks & Reference Books:

1. Laura Lemay, Rafe Colburn, Jennifer Kyrnin, "Mastering HTML, CSS & Javascript Web Publishing" , BPB Publications
2. Thomas A. Powell , " HTML & CSS: The Complete Reference" , McGraw Hill
3. Black Book , "Web Technologies: HTML, JAVASCRIPT, PHP, JAVA, JSP, ASP.NET, XML and Ajax, Black Book: HTML, Javascript, PHP, Java, Jsp, XML and Ajax" , Dreamtech press
4. Black Book , "ASP.NET 4.5, Covers C# and VB Codes" , Dreamtech press
5. Matthew Macdonald , "ASP.NET: The Complete Reference" , McGraw-Hill

6. Imar Spaanjaars, "Beginning ASP.NET 4.5 in C# and VB", Wrox

SUBJECT- RDBMS CONCEPTS & ORACLE
CODE- BCA(Y-205)

UNIT I

Introduction: Evolution of DB and DBMS, need for Data Management, Introduction and Application of DBMS, File System versus Database System. **Concepts of DBMS:** Data, Information, Database, Components of DBMS, Architecture of a database system – Physical, Conceptual and User level, Data Independence – Logical and Physical, DBMS terminology, Data Dictionary.
Concepts of Multitier Architecture in databases, Brief idea about distributed databases, parallel databases, mobile databases, temporal databases, spatial databases, geographic databases, data warehousing, data mining, data visualization, OODB and XML Databases, Multimedia and Web Databases.

UNIT II

Database Models: Network, Hierarchical and Relational Models, Features and Comparison of the three models..
RDBMS: Introduction to Relational Database, Structure of Relational Database, Relational Model terminology- domains, Attributes, Tuples, Relations, Relational DB Schema, ER-Model, ER-Diagram, ER-concepts, and types of relationships. Codd's 12 rules.
Normalization: Functional Dependency, definition, Trivial and Non-Trivial Functional Dependencies, Steps involved in normalization, 1NF, 2NF, 3NF, Decomposition using Functional Dependency preservation, BCNF, Multi-valued Dependency, 4NF, Join Dependency, 5NF.

UNIT III

Idea about Generalization, Aggregation, Specialization.
Indexing & Hashing : Basic Concepts, Indexing: b+ tree & B- tree index files, Hashing: static & dynamic hashing **. Elementary Concepts of Database Security:** System failure, Backup and Recovery Techniques, Authorization and Authentication. **Relational Algebra:** Formal Definition, Fundamental Operations – select, project, union, set, difference, Cartesian product & rename, additional operations & extended operations.

UNIT IV

Concept of SQL sublanguages – DDL, DML, DCL, TCL, SCL etc., Embedded SQL.
Interactive SQL: Oracle data types, table creation, modifying the structure of tables, dropping and renaming tables. **DML commands:** Insertion, updation, deletion operations, many faces of select command, data constraints, logical operators, range searching, pattern matching, oracle functions, use of Alias, grouping data from tables, manipulating dates in sql.

UNIT V

Joins: Equi Join, Self Join, Cross Join. Sub queries, Indexes, Views, Sequences, Roles, Synonyms. **TCL Commands:** use of savepoint, rollback, commit commands. **DCL Commands**: creating user accounts, granting permissions, revoking permissions. Concept of importing and exporting database files.
Text Books & Reference Books:

1. Abraham Silberschatz, Henry Korth, S. Sudarshan, "Database System Concepts" McGraw Hill
2. Rajesh Narang "Database Management System" PHI
3. C.J. Date , "An introduction to database system "

4. Bipin C. Desai, "An Introduction to Database System" .
5. Ramakrishnan Gehrke , "Database management system".

SUBJECT- SOFTWARE ENGINEERING
CODE- BCA(Y-206)

UNIT I

Introduction to Software Engineering: Introduction to Software, Types of software, Software Components, Software Characteristics, Software Engineering , Scope and necessity of Software Engineering, Software Engineering Processes, Factors affecting Quality and Quantity of Software. Software Development Life Cycle (SDLC), **Software Models:** Water Fall Model, Prototype Model, RAD Model, Evolutionary Development Models (Spiral Model, Incremental Model Concurrent Development Model)

Software Requirement Analysis: Requirement Specifications: Need for SRS, Nature of SRS, Characteristics, Components of SRS. Requirements analysis: Review and Management of User Needs, Feasibility Study, Information Modeling, IEEE Standards for SRS, Various SRS Templates, Validation of SRS.

UNIT II

Software Metrics and Measurement: Software Process and Project Metrics, Software Measurement, Cyclomatic Complexity Measures: Control Flow Graphs, Software Quality Matrices. **Software Project Planning:** Objectives, Scope, Software Cost Estimation: Decomposition Techniques: Software sizing , Problem Based Estimation, Line of Code(LOC) Vs Function Point (FP) Based Estimation, Process Based Estimation; Empirical Estimation Models: The COCOMO Model; Make/Buy Decision, Software Risk Management.

Software Analysis : Analysis Model, Process and various Documents. **Conventional Analysis:** Data Modeling (ER Diagram), Functional Model & Information Flow (DFDs), Behavioral Modeling, Structured Analysis, Data Dictionary. **Object Oriented Analysis:** Domain Analysis, Object Oriented approach Process (Use Case), Object-Relational Model, Object- Behavioral Model.

UNIT III

Software Design: Conventional Design: Design Process, Principles & Concepts, and Design Model. **Object Oriented Design:** Design Issues, Design Process: System Design, Object Design. **Software Design Document:** Software Design Document & its various example templates: Data Design, Architecture Design, and Interface Design & Procedural Design. **Coding:** Code Debugging**,** Verification and Code Optimization.

Testing, Deployment & Maintenance: Objectives, Types of Software Testing, Testing for Functionality and Performance, Structural Testing (White Box Testing), Functional Testing (Black Box Testing), Test Data Suite Preparation, Levels of Testing: User, Integration, System Alpha and Beta Testing, User Acceptance of Products, Roll out of Software & Deployment Issues. Need for Maintenance, Categories of Maintenance: Corrective, Preventive, Adaptive and Perfective Maintenance, Cost of Maintenance, Software Re-Engineering, Reverse Engineering, Software Reuse.

UNIT IV

Introduction to Software Project Management (SPM): Project stakeholders, Project management knowledge areas, Project management tools and techniques, Project success factors; The Role of the Project Manager: Job description, Skills for project manager, Ethics in Project Management, Project

Management Software. Project Integration Management . Project Execution, Monitoring and Controlling the Project.

Project Time Management: Importance of Project Schedules and Time Management, Activity Definition, Activity Sequencing, Activity Resource Estimation, Activity Duration Estimation, Schedule Development, Gantt Charts, Critical Path Method (CPM), Program Evaluation and Review Technique (PERT) **Project Cost Management:** Importance and Principles of Project Cost Management, Cost Estimation, Types of cost estimates, Cost estimation tools and techniques, Cost Budgeting, Cost Control, **Project Quality Management:** Importance of Project Quality Management, Quality planning, Quality assurance, Quality control, Tools and Techniques for Quality Control, Pareto analysis, Statistical sampling, Testing, ISO standards for quality, Cost of Quality.

UNIT V

Project Human Resource Management: Motivation theories, Maslow‘s hierarchy of needs, Improving effectiveness, Human Resource Planning, Project organizational charts, Responsibility assignment matrices, Management plans and resource histograms, Acquiring the Project Team, Resource assignment, Resource loading, Resource leveling, Developing the Project Team, Managing the Project Team.

Software Configuration Management (SCM), Software Version Control. Software Quality Management**,** Software Quality Assurance (SQA), Software Reliability & Reliability Models, Clean Room Software Engineering Approach. **CASE Tools:** Overview of CASE Tools Framework, Features, Advantages and Limitations of CASE Tools, Awareness about Some Commercial CASE Tools Use and Applications.

Textbooks & Reference books:

1. R. S. Pressman, ―Software Engineering: A Practitioners Approach, McGraw Hill.
2. Rajib Mall, Fundamentals of Software Engineering, PHI Publication.
3. Pankaj Jalote, ―Software Engineering, Wiley.
4. Pankaj Jalote ―Software Project Management In Practice, Pearson Education,
5. Carlo Ghezzi, M. Jarayeri, D. Manodrioli, ―Fundamentals of Software Engineering, PHI Publication.
6. Ian Sommerville, ―Software Engineering, Addison Wesley.

FACULTY OF COMPUTER APPLICATION
CLASS: BCA SECOND YEAR

SUBJECT- ORGANIZATIONAL BEHAVIOR
CODE- BCA(Y-207)

UNIT I

Fundamentals of OB : Definition, Scope and importance of OB, Relationship between OB with other disciplines –Psychology, Sociology, Anthropology and Political science. Challenges and Opportunities for OB.. Theoretical framework and models of OB (cognitive, behavioristic and social cognitive).

UNIT II

Individual Differences and Behavior: Foundations of individual behavior: Biographical Characteristics, Ability and learning. Attitudes, Values and Job Satisfaction. Attitude: Importance of attitude in an organization, Measuring Attitude, Components of attitude, Relationship between behavior and attitude.

Importance of Values and Ethical behavior. Job satisfaction: Concept and measurement. Concept of Personality and Emotions. The Big Five personality model, Significant personality traits suitable to the workplace (personality & job –fit theory), Emotions, Emotional Intelligence. Developing Emotional Intelligence at the workplace. Perception: Meaning and concept of perception, Factors influencing perception, Motivation: Definition & Concept, Theories of Motivation (Maslow's Need Hierarchy & Herzberg's Two Factor model Theory). The Process Theories (Vroom's expectancy Theory & Porter Lawler model). Contemporary Theories- Equity Theory of Work Motivation.

UNIT III

Group Behaviour and Interpersonal Influence: Foundation of Group Behavior: The Meaning of Group, Group behavior & Group Dynamics, Types of Groups, The Five –Stage Model of Group Development. Managing Teams: Work teams In Organization, Developing Work Teams, Team Effectiveness & Team Building, Managing Conflict and Negotiation- Conflicts in Organizations, A contemporary perspective on intergroup conflict, What causes intergroup conflict, The causes of dysfunctional intergroup conflict, Managing intergroup conflict through Resolution, Stimulating Constructive intergroup conflict, Negotiations- Negotiation tactics, Increasing negotiation effectiveness. Assertive Behaviour- Interpersonal Orientations, Facilitating smooth relations, Stroking.

Job stress: Concept of Stress, Stress model, Work stressors, Stress outcomes, Stress moderators, Stress prevention and management, Employee counseling, Types of counseling.

UNIT IV

Organization System and Processes:

Communication - The importance of communication, The communication process, Communicating within organizations, Information richness, How technology affects communication, Interpersonal communication, Multicultural communication, Barriers to effective communication, Improving Communication in organizations, Promoting ethical communications.

FACULTY OF COMPUTER APPLICATION
CLASS: BCA SECOND YEAR

Decision Making - Types of decisions, A Rational Decision-making Process, Alternatives to Rational Decision making, Behavioral influences on decision making, Group decision making, Creativity in group decision making.

Leadership - Concept of Leadership, Styles of Leadership, Traits Approach, Contingency leadership Approach, Contemporary leadership, meaning and significance of contemporary leadership, Contemporary issues in leadership, Contemporary theories of leadership, Concept of Transformational leadership, Multicultural leadership, Success stories of today's Global and Indian leaders.

UNIT V

Organizational Design, Change And Innovation : Designing an organizational structure, Division of labour, Delegation of authority, Departmental biases, Span of control, Dimensions of structure, Organizational design models, Multinational Structure and Design, Virtual Organizations.

Organizational Culture: Meaning & Definition of Organizational Culture, Creating & Sustaining Organizational Culture. Types of Culture (Strong vs. Weak Culture, Soft vs. Hard Culture & formal vs. Informal Culture), Creating Positive Organizational Culture, Concept of Workplace Spirituality.
Organizational behaviour across cultures, Conditions affecting multinational operations, Managing International Workforce, Productivity and cultural contingencies, Cross cultural communication.

Organizational Change: Meaning, definition & Nature of Organizational Change, Types of organizational change, Forces that acts as stimulants of change, Implementing Organizational Change : How to overcome the Resistance to Change, Approaches to managing Organizational Change , Kurt Lewin's-Three step model, Seven Stage model of Change & Kotter's Eight Step plan for Implementing Change, Leading the Change Process, Facilitating Change, Dealing with Individual & Group Resistance, Intervention Strategies for Facilitating Organization Change, Methods of Implementing Organizational Change, Developing a Learning organization, Organizational Development: Concept and Techniques of OD. The future of Organizational Behaviour.

Text Books& reference books

1. Organizational Behaviour by Robins
2. Organizational Behaviour by Nelson & Quick
3. Organizational Behaviour by Fred Luthans
4. Organizational Behaviour –Niraj Kumar
5. Organizational Behaviour by Stephen Robins, Timothy Judge, Neharika Vohra
6. Organizational Behaviour by M N Mishra
7. Organizational Behaviour by K Ashwathappa

Supplementary Reading Material

1. Contemporary Leadership Theories: Enhancing the Understanding of the complexity, subjectivity and dynamic of leadership by Ingo Winkler
2. Organizational Performance in a Nutshell by Daniel M.Wentland

FACULTY OF COMPUTER APPLICATION
CLASS: BCA SECOND YEAR

FOUNDATION COURSE (MORAL VALUE AND LANGUAGE-II)
Code: FC(Y--204A)

UNIT-I

हिन् दी भाषा:

1. वह तोड़ती पत थर)कविता) - सूर्यकांत त्रिपाठी निराला
2. दिमागी गुलामी)निबंध) - राहुल सांक्रत यायन
3. वर्ण -विचार (स् वर- व यंजन, वर्गीकरण, उच चारण स् थान

UNIT-II

हिन् दी भाषा

1. नारीत व का अभिशाप)निबंध) - म हादेवी वर्मा
2. चीफ की दावत)कहानी - (भीष म साहनी
3. विराम चिन् ह) -संकलित(

UNIT-III

हिन् दी भाषा: नैतिक मूल् य

1. शिकागो व याख यान)व याख यान - (स् वामी विवेकानंद
2. धर्म और राष ट्रवाद) -लेख) महर्षि अरविन् द
3. सादगी)आत मकथा)- महात मा गांधी
4. चित त जहां भय शून् य)कविता)- रवीन् द्रनाथ टैगोर

UNIT IV

English:

1. Tree: Tina Morris
2. Night of the Scorpion : Nissim Ezekiel
3. Idgah : Premchand (translated by Khushwant singh
4. Letter to God : G.L. Swanteh (translated by Donald a Yates
5. My Bank Account : Stephen Leacock
6. God sees the Truth but waits : Leo Tolstoy

UNIT V

English:

1. Short Essay on given topics
2. Correspondence skills (format & Informal letters and Application)
3. Translation of sentences/passage English to Hindi and Hindi to English.

Suggested Readings: Madhya Pradesh Hindi grant academy, Bhopal published book.

FACULTY OF COMPUTER APPLICATION
CLASS: BCA SECOND YEAR

FOUNDATION COURSE (ENVIRONMENTAL STUDIES)
Code: FC(Y—204B)

UNIT I

Study of Environment and ecology: Definition and Importance of Environment and Ecology, Public participation and Public awareness.

UNIT II

Environmental Pollution : Air Pollution, water Pollution, noise Pollution, heat and nuclear pollution- Definition, Causes, effect and prevention of pollution, Disaster management – Flood, Earthquake, cyclones and landslides.

UNIT III

Environment and social problems: Sustainable development- Introduction, Energy problems of cities, solar energy, biogas and wind energy, Water conservation – rain-water harvesting.

UNIT IV

Role of mankind in conserving natural resources: Food resources – World food problem , Energy resources – increasing demand for energy.

UNIT V

Environment conservation laws: Conservation laws for air and water pollution, Wildlife conservation laws, Role of information technology in protecting environment & health.

Suggested Readings:

- **Madhya Pradesh Hindi grant academy, Bhopal published book.**

FACULTY OF COMPUTER APPLICATION
CLASS: BCA SECOND YEAR

Lab I

BCA(Y- 208)

SUGGESTED LIST OF PRACTICALS

I. (A) C++

1. Write a program to convert decimal (integer) number into equivalent binary number.
2. Write a program to print Fibonacci series.
3. Write a program to find factorial of a given number using recursion.
4. Write a program to swap the contents of two variables with functions value parameters, address parameters and pointer parameters.
5. Write a program to check given string is palindrome or not.
6. Write a max function which accepts two numbers and find the maximum of two numbers. The two given numbers can be integer, float, or double so that the functions may call the overloaded functions.
7. Write a program to perform multiplications of two matrices.
8. Write a program to design a class distance with feet and inches as data members. Use a data function to set and show the distance.
9. Write a program to design a class with length and height as data member. Use a data function to get value of length and height from the keyboard and display area of right angle triangle.
10. Write a program to overload the binary operator to add two complex numbers.
11. Write a program to find the area and volume of a rectangular box using constructor.
12. Write a program to design a class time with hours, minutes and seconds as data members. Use a data function to perform the addition of two times objects in hours, minutes and seconds.
13. Write a program to implement single inheritance.

I. (B) Data Structures

1. Write a program to traverse an array.
2. Write a program to insert item at k^{th} position in an array.
3. Write a program to delete k^{th} position item from array.
4. Write a program to push and pop operations on a stack using array.
5. Write a program to insert and delete operation on a queue using array.
6. Write a program for selection sort.
7. Write a program for bubble sort.
8. Write a program for linear (sequential) Search.

9. Write a program for binary search.
10. Write a program to implement linked list.

II. Implementation of Numerical and Statistical Methods

1. Write a program to implement Bisection Method.
2. Write a program to implement False Position Method.
3. Write a program to implement Newton Raphson Method.
4. Write a program to implement Trapezoidal Rule.
5. Write a program to implement Simpson's 1/3 Rule.
6. Write a program to implement Simpson's 3/8 Rule.
7. Write a program to implement Lagrange's interpolation formula.
8. Write a program to implement Euler's method.
9. Write a program to implement Runge Kutta Method of order 2.
10. Write a program to implement Runge Kutta Method of order 4.
11. Write a program to implement Karl Pearson's Coefficient of Correlation.

FACULTY OF COMPUTER APPLICATION
CLASS: BCA SECOND YEAR

Lab II
BCA(Y- 209)

SUGGESTED LIST OF PRACTICALS

A. SQL

1. Create tables named Employee, Department, and Salary. Implement all DDL commands on it.
2. On the Employee Table use the many faces of SELECT command.
3. On a table perform WHERE CLAUSE, HAVING, GROUP BY, ORDER BY, IN, NOT IN, BETWEEN
4. Create a Database implementing Primary and Foreign Key.
5. Implement I/O Constraints and Business Rule constraints on the database created as in 4 above.
6. Perform Nested Queries on table STUDENT.
7. Perform different types of JOINS on any two tables.
8. Create VIEWS, SEQUENCES and SYNONYMS on a table.
9. Use of SAVEPOINT, ROLLBACK and COMMIT command.

B. Web technology

I. HTML, CSS and Javascript:

1. Design a home page which displays information about your college department using paragraph and list tags, apply basic formatting, insert images also.
2. Create hyperlinks in home page connecting it to 3 different pages. Also, create 3 hyperlinks in home page, which jump to 3 different headings on the same page.
3. Design a timetable and display it in tabular format. Implement CSS backgrounds and borders in the page.
4. Design a Registration form in HTML using HTML forms. Apply CSS on web page and various form controls.
5. Implement JavaScript validation on a sign-up form.
6. Design a web-page whose content can be changed using JavaScript events.
7. Write a html code inserting JavaScript to create a basic calculator.

II. .Net & C#

8. Design & code an .aspx web form using textbox, label and button control to calculate simple interest.
9. Design a program in ASP.Net to print student's grade based on the following criteria(using nested if) :

1)Grade A – percent>=75 2)Grade B – percent >=60 and <75 3) Grade C – for others

10. Calculate factorial of number using for and while loop
11. Calculate gross salary of an employee based on options selected from the check box list. Options are using checkbox list:
    1) HRA, 2) DA and 3) PF
12. Write a program using radio button list control to change the colour of a label, and use check box list control to change the bold, italic and underline styles of that label .

III. Mini Project using Visual Studio

Create a sign-up form (in 70% width of body) which takes data through text-fields, radio-buttons, check-boxes, drop-down list, calendar control etc. Apply various types of validation through validation controls and then fill that data into a table of a SQL Server Database File. Make space for Advertisements in 30% body and display ads u