**I SEMESTER**

##### COMPUTER FUNDAMENTALS AND PHOTOSHOP

**UNIT-I:**

**Introduction to computers**: Characteristics and limitations of computer, Block diagram of computer, types of computers, uses of computers, computer generations.

**Number systems:** working with binary, octal, decimal and Hexa decimal numbering system.

##### UNIT-II:

**Input and Output devices**: Keyboard and mouse, inputting data in other ways, Pointing Devices, Handheld Devices, Optical Devices, Audio-Visual Input Devices.Output Devices: Monitors, Projectors, Speakers, Printers, Plotters.

**Types of Software**: system software, Application software, commercial, open source, domain and free ware software.

**Memories**: Primary, Secondary and cache memory. Secondary Storage Devices: Magnetic Tapes, Floppy Disks, Hard Disks.

**Windows basics**: Start menu, icons, MSWindows-Desktop, My Computer, My Documents, Pictures, Music, Videos, Recycle Bin, and Task Bar - Control Panel.

##### Unit –III

**Introduction to Adobe photoshop**: Getting started with photoshop, creating and saving a document in photoshop, page layout and back ground.

**PROGRAMMING USING C**

##### UNIT - I

**Introduction to Algorithms and Programming Languages**: Algorithm – Key features of Algorithms – examples of Algorithms – Flow Charts – Pseudo code – Programming Languages

– Generation of Programming Languages – Structured Programming Language.

**Introduction to C:** Introduction – Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs – Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting.

##### UNIT - II

**Decision Control and Looping Statements:** Introduction to Decision Control Statements – Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Goto Statement.

**Functions**: Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive functions – Type of recursion – Towers of Hanoi.

**ELEMENTARY MATHEMATICS**

**Unit-I: Matrix Algebra:**

**Matrix Algebra:** Types of matrices -Matrix addition and subtraction - Matrix multiplication- Transpose of a matrix, row matrix, column matrix, Symmetric and skew symmetric matrices.

**Unit-II: Linear Equations:**

Ad joint of a square matrix- Inverse of square matrix by using Adj A 3 order only.

**Solution of Linear Equations.**

(i) Cramer's Rule

(ii) Matrix Inverse method

**Unit-III: Graph Theory:**

Introduction, Sub graphs, Isomorphic and Homeomorphic Graphs, paths, connectivity, Labeled and Weighted Graphs, complete, Regular, and Bipartite Graphs.

**III SEMESTER**

**OBJECT ORIENTED PROGRAMMING USING JAVA**

**UNIT-1**

**FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING: Introduction**, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features: **OVERVIEW OF JAVA LANGUAGE**: Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. **CONSTANTS, VARIABLES & DATA TYPES:** Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values; **OPERATORS & EXPRESSIONS**.

**UNIT-II**

**DECISION MAKING & BRANCHING:** Introduction, Decision making with if statement, Simple if statement, if. Else statement, Nesting of if. else statements, the else if ladder, the

switch statement, the conditional operator. **LOOPING**: Introduction, The While statement, the do-while statement, the for statement, Jumps in loops.

**CLASSES, OBJECTS & METHODS**: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods;

**UNIT-III**

**INHERITANCE**: Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes;

**ARRAYS, STRINGS AND VECTORS:** Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays

**DATABASE MANAGEMENT SYSTEMS**

**Unit-1**

**Database Systems:** Introducing the database and DBMS, Files and File Systems, Problems with

File System and advantages of Database Management systems.

**Data Models:** The importance of Data models, Data Model Basic Building Blocks, Business

Rules, The evaluation of Data Models, Degree of Data Abstraction.

**Unit-II**

**The Relational Database Model:** A logical view of Data, Keys, Integrity Rules, Relational Set Operators, The Data Dictionary and the system catalog, Relationships with in the Relational Database, Data Redundancy revisited, Indexes, Codd’s relational database rules.

**Entity Relationship Model:** The ER Model, Developing ER Diagram,

**Unit-III**

**Normalization of database tables:** Database Tables and Normalization, The need for

Normalization, The Normal forms of BCNF

**ACCOUNTING AND FINANCIAL MANAGEMENT**

**Unit- I**

Introduction to accounting: Definitions, objectives, functions - Book keeping and accounting. Accounting concepts and conventions. Accounting cycle, Classification of accounts – Rules of double entry system of bookkeeping – journal – posting to ledger, balancing of ledger.

**Unit – II**

Subsidiary Books – Trail Balance: Sub division of Journal – Preparation of subsidiary books Different types of cash books - Preparation of trail balance.

**Unit – III**

Final Accounts : Preparation of Final accounts – Trading Account – Profit and loss account – Balance Sheet

**V SEMESTER**

**SOFTWARE ENGINEERING**

**UNIT I**

**INTRODUCTION:** Software Engineering Process paradigms - Project management - Process and Project Metrics – software estimation - Empirical estimation models – Planning.

**UNIT II**

**REQUIREMENTS ANALYSIS: Requirement** Engineering Processes – Feasibility Study –

Problem of Requirements – Software Requirement Analysis – Analysis Concepts and Principles

– Analysis Process – Analysis Model

**UNIT III**

**SOFTWARE DESIGN:** Software design - Abstraction - Modularity - Software Architecture - Effective modular design - Cohesion and Coupling

**NETWORK SECURITY**

**UNIT – I**

**INTRODUCTION:** OSI Security Architecture - Classical Encryption techniques - Cipher

Principles - Data Encryption Standard - Block Cipher Design Principles and Modes of Operation.

**UNIT - II**

**PUBLIC KEY CRYPTOGRAPHY:** Key Management - Diffie-Hellman key Exchange - Elliptic Curve Architecture and Cryptography - Introduction to Number Theory - Confidentiality using Symmetric Encryption - Public Key Cryptography and RSA.

**UNIT – III**

**AUTHENTICATION AND HASH FUNCTION: Authentication** requirements - Authentication functions.

**OBJECT ORIENTED ANALYSIS & DESIGN**

**UNIT I**

Introduction to OOAD – What is OOAD? – What is UML? What are the United process(UP) phases - Case study – the NextGen POS system, Inception -Use case Modeling - Relating Use cases – include, extend and generalization.

**UNIT II**

Elaboration - Domain Models - Finding conceptual classes and description classes – Associations – Attributes – Domain model refinement – Finding conceptual class hierarchies- AggregationandComposition.

**UNIT III**

UML activity diagrams and modeling – USE CASE diagram

**DATA MINING &DATA WARE HOUSING**

**Unit I**

Introduction to Data Mining, Fundamentals of data mining, data mining functionalities, data and attribute types, statistical description of data.

Data Preprocessing:

Data cleaning, data integration, data reduction, data transformation and data discretization.

**Unit II**

**Data Warehousing**: Basic concepts, data ware house modeling data cube and OLAP, data warehouse design and implementation.

**Unit III**

Mining Frequent Patterns and Associations: Basic methods, frequent Item set mining methods using with Apriori algorithm

**SOFTWARE TESTING METHODOLOGIES**

**UNIT-I**

Introduction: Purpose of testing, Dichotomies, model for testing, consequences of bugs, taxonomy of Bugs.

Flow Graphs and Path testing: Basics concepts of path testing, predicates, path predicates and

Achievable paths, path sensitizing, path instrumentation, application of path testing.

**UNIT-II**

Transaction Flow Testing: Transaction flow, transaction flow testing techniques.

Dataflow testing: Basics of dataflow testing, strategies in dataflow testing, application of dataflow testing.

**UNIT-III**

Domain Testing: domains and paths, Nice & ugly domains, domain testing