

BCA-31 WEB TECHNOLOGIES

Maximum Marks: 100

Time: 3 hours

External: 70

Internal: 30

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

Course Objectives:

- The aim of the course is to provide knowledge of web as a tool in presenting information.
- Each and every product in e-world now needs a website, this course will make student knowing about the concept of web design in general.

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

- learn about WWW and search engines.
- understand domain and assigning name to them.
- understand basic web languages and its components.
- perform simple web page designing for practical exposure.

UNIT – I

Introduction to Internet and World Wide Web; Evolution and History of World Wide Web; Basic features; Web Browsers; Web Servers; Hypertext Transfer Protocol; URLs; Searching and Web- Casting Techniques; Search Engines and Search Tools;

UNIT – II

Web Publishing: Hosting your Site; Internet Service Provider; Planning and designing your Web Site; Steps for developing your Site; Choosing the contents; Home Page; Domain Names; Creating a Website and the Markup Languages (HTML, DHTML);

UNIT – III

Web Development: Introduction to HTML; Hypertext and HTML; HTML Document Features; HTML command Tags; Creating Links; Headers; Text styles; Text Structuring; Text colors and Background; Formatting text; Page layouts; Images; Ordered and Unordered lists; Inserting Graphics; Table Creation and Layouts;

UNIT – IV

Frame Creation and Layouts; Working with Forms and Menus; Working with Radio Buttons; Check Boxes; Text Boxes.

CSS: Introduction, Types of style sheets, Style specification formats, Font properties, List properties, Color, Alignment of text, Background images, The and <div> tags, Features of CSS3.

TEXT BOOKS:

1. Raj Kamal, "Internet and Web Technologies", TataMcGraw-Hill.
2. Ramesh Bangia, "Multimedia and Web Technology", FirewallMedia.

REFERENCE BOOKS:

1. Thomas A. Powell, "Web Design: The Complete Reference" , 4/e, TataMcGraw-Hill
2. Wendy Willard, "HTML Beginners Guide", TataMcGraw-Hill.
3. Deitel and Goldberg, "Internet and World Wide Web, How to Program", PHI.

BCA-32 DATABASE MANAGEMENT SYSTEM

Maximum Marks: 100

External: 70

Time: 3 hours

Internal: 30

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

Course Objective:

- Effectively explains the basic concepts of databases and data models.
- To study the features of database management systems, architecture of database systems, and the role of database users.
- Understands the concepts and develops an Entity-Relationship model based on user requirements.

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

- comprehend how to use Structured Query Language (SQL) to define and manipulate database information.
- designs SQL queries to create database tables and make structural modifications.
- designs SQL queries to add data to the database, edit existing data, and to delete data from the database.

UNIT-I

Basic Terminology, Traditional file based Systems- File Based Approach-Limitations of File Based Approach, Database Approach-Characteristics of Database Approach, Database Management System (DBMS), Components of DBMS Environment, DBMS Functions and Components, Advantages and Disadvantages of DBMS.

Roles in the Database Environment - Database Administrator, Database Designers, Applications Developers and End Users.

Unit-II

Database System Architecture – Three Levels of ANSI/SPARC Architecture, Schemas and Instances, Data Independence – Logical and Physical Data Independence.

Classification of Database Management System, Centralized and Client Server architecture to DBMS.

Introduction to Data Models, Entity-Relationship Model – Entity Types, Entity Sets, Attributes Relationship Types, Relationship Instances and ER Diagrams

Unit-III

Relational Model, Relational Model Terminology-Relational Data Structure,

Database Relations, Properties of Relations, Keys, Domains, Integrity Constraints over Relations,

Base Tables and Views. Relational Algebra & various operations (with respective SQL commands), Tuple and Domain calculus

Unit-IV

Functional dependencies & NORMALISATION: Data Redundancy and Update Anomalies.

Functional Dependencies:-Full Functional Dependencies and Transitive Functional Dependencies, Decomposition and Normal Forms (1NF, 2NF, 3NF & BCNF).

Text Books:

1. Database System Concepts by A. Silberschatz, H.F. Korth and S. Sudarshan, 3rd edition, 1997, McGraw-Hill, International Edition.
2. Introduction to Database Management system by Bipin Desai, 1991, Galgotia Pub.

Reference Books:

1. Fundamentals of Database Systems by R. Elmasri and S.B. Navathe, 3rd edition, 2000, Addison-Wesley, Low Priced Edition.
2. An Introduction to Database Systems by C.J. Date, 7th edition, Addison-Wesley, Low Priced Edition, 2000.

3. Database Management and Design by G.W. Hansen and J.V. Hansen, 2nd edition, 1999, Prentice-Hall of India, Eastern Economy Edition.
4. Database Management Systems by A.K. Majumdar and P. Bhattacharyya, 5th edition, 1999, Tata McGraw-Hill Publishing.
5. A Guide to the SQL Standard, Date, C. and Darwen, H. 3rd edition, Reading, MA: 1994, Addison-Wesley.

BCA-33 SOFTWARE ENGINEERING

Maximum Marks: 100

Time: 3 hours

External: 70

Internal : 30

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

Course Objectives:

- to study fundamental concepts in software engineering, SDLC, Software requirements specification, formal requirements specification and verification.
- to study the basic techniques for improving quality of software.
- to understand the fundamental principles of Software Project management & will also have a good knowledge of responsibilities of project manager and how to handle these.
- to understand the basic knowledge of Estimation model.

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

- ability to analyze and specify software requirements.
- ability to apply software engineering principles and techniques to develop large-scale software systems.
- ability to plan and work effectively in a team.

Unit-I

Software and software engineering, Software characteristics, software crisis, Software life cycle, software engineering paradigms, Planning and software project, Software cost estimation, project scheduling, personnel planning, team structure.

Unit-II

Software configuration management: quality assurance, project monitoring, risk management.

Software requirement analysis - structured analysis, object oriented analysis, software requirement specification, validation.

Unit-III

Design and implementation of software - software design fundamentals, Structured design methodology and Object Oriented design, design verification, monitoring and control, coding.

Software Reliability - metric and specification, fault avoidance and tolerance, exception handling, defensive programming.

Unit-IV

Testing - Testing fundamentals, white box and black box testing, software testing strategies: unit testing, integration testing, validation testing, system testing, debugging.

Software maintenance - maintenance characteristics, maintainability, maintenance tasks, maintenance side effects. Case tools, Agile development.

Text Books:

1. Fundamentals of Software Engineering, Rajib Mall.
2. Software Engineering, a book by Aggarwal K.K, Singh Yogesh, New Age International

Reference Books:

1. Pressman S. Roger, Software Engineering, Tata McGraw-Hill.
2. Jalote Pankaj, An integrated Approach to software, Engineering, Narosa Publishing House.

BCA-34 COMPUTER ARCHITECTURE

Maximum Marks: 100

External: 70

Time: 3 hours

Internal : 30

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

Course Objectives:

- The aim of this course is to provide knowledge of computer as a system.
- Making students aware of internal mechanism of computer hardware and its working.

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

- learn various trends in computer architectures.
- learn RTL and working of microprogrammed control unit.
- learn hardware algorithms for basic arithmetic operations.
- understand role of memory hierarchy and working of various types of memory.

UNIT – I

Computer Architecture: Evolution of Concept of Computer Architecture, RISC & CISC architectures. Look Ahead & Pipelining: Instruction look ahead, look ahead and look behind, advantages of look ahead systems. Pipelined execution of instruction – operation of pipelines, optimizing a pipeline, speedup due to pipelining.

UNIT – II

Interrupt Structures: Types of interrupts, Interrupt processing, levels and priorities of interrupts, implementing interrupts inside the CPU.

Information exchange between devices – serial and parallel modes of transfer, synchronous and asynchronous mode of transfer – source-initiated, destination-initiated asynchronous data transfer, handshaking.

UNIT – III

Computer Arithmetic: Hardware algorithms in flowchart for addition and subtraction - with signed-magnitude data, with 2's complement data. Hardware algorithms in flowchart for multiplication & division – booth multiplication, Algorithms for addition, subtraction, multiplication & division with floating-point data.

UNIT – IV

Memory System: Memory hierarchy, characteristics, locality of reference, inclusion, coherence properties of memory hierarchy, Cache Memory, Mapping schemes of Cache, Associative Memory and Interleaved Memory.

Text books:

1. P.V.S. Rao, “Computer System Architecture”, PHI, 2009
2. John D. Carpinelli, “Computer System Organization and Architecture”, Pearson, 2009

Reference books:

1. M. Morris Mano, “Computer Architecture”, 3/e, PHI, 2001.
2. John P. Hayes, “Computer Architecture and Organization”, McGraw-Hill, 1998
3. William Stallings, “Computer organization and Architecture”, PHI, 1999.

BCA- 35 DISCRETE STRUCTURES

Maximum Marks: 100

External: 70

Time: 3 hours

Internal : 30

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

Course Objective:

- to provide students with an overview of discrete mathematics.
- to learn about topics such as logic and proofs, sets and functions, probability, recursion, graph theory, matrices, Boolean algebra and other important discrete math concepts.

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

- use logical notation
- perform logical proofs
- apply recursive functions and solve recurrence relations
- determine equivalent logic expressions
- define sets and sequences

UNIT-I

Introduction to Logic. Propositional Logic, Truth tables, Deduction, Resolution, Predicates and Quantifiers, Mathematical Proofs. Infinite sets, well-ordering. Countable and Uncountable sets. Mathematical Induction – weak and strong induction.

UNIT-II

Relations, Equivalence Relations. Functions, Bijections. Binary relations and Graphs: Graphs: Directed and undirected graphs, chains, Circuits, Paths, Cycles, connectivity, Adjacency & incidence matrices, Trees (Basics). Posets and Lattices, Hasse Diagrams. Boolean Algebra.

UNIT-III

Counting, Sum and product rule, Principle of Inclusion Exclusion. Pigeon Hole Principle, Counting by Bijections. Double Counting. Linear Recurrence relations – methods of solutions. Generating Functions. Permutations and counting.

UNIT-IV

Structured sets with respect to binary operations. Group And Subgroups: Group axioms, Permutation groups, Subgroups, Co-sets, Normal subgroups, Semigroups. Rings, and Fields.

Textbooks:

1. Discrete Mathematics and its Applications – Kenneth H. Rosen 7th Edition -Tata McGraw Hill Publishers – 2007
2. Elements of Discrete Mathematics, C. L Liu, McGraw-Hill Inc, 1985. Applied Combinatorics, Alan Tucker, 2007.

Reference Books:

1. Concrete Mathematics, Ronald Graham, Donald Knuth, and Oren Patashnik, 2nd Edition – Pearson Education Publishers – 1996.
2. Combinatorics: Topics, Techniques, Algorithms by Peter J. Cameron, Cambridge University Press, 1994 (reprinted 1996).
3. Topics in Algebra, I.N. Herstein, Wiley, 1975.

BCA-41 CORE JAVA

Maximum Marks: 100

Time: 3 hours

External: 70

Internal : 30

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

Course objective:

- to understand integrated development environment to write, compile, run, and test simple object-oriented Java programs.
- to Read and make elementary modifications to Java programs that solve real-world problems
- to Identify and fix defects and common security issues in code.
- to demonstrate skills in writing programs using exception handling and multithreading.

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

- illustrate basic programming concepts such as program flow and syntax of a high-level general purpose language.
- demonstrate working with primitive data types, strings and arrays.
- design event driven GUI and web related application which mimic the real world scenarios.

UNIT-I

Introduction to Java. Features of java - JDK Environment & tools like (java, javac, appletviewer, javadoc, jdb), Object Oriented Programming Concept- Overview of Programming, Paradigm, Classes, Abstraction, Encapsulation, Inheritance, Polymorphism, Difference between C++ and JAVA, Java Programming Fundamental- Structure of java program, Data types, Variables, Operators, Keywords, Naming Convention, Decision Making (if, switch), Looping (for, while), Type Casting

UNIT-II

Classes and Objects -Creating Classes and objects, Memory allocation for objects, Constructor, Implementation of Inheritance, Simple Multilevel Hierarchical, Implementation of Polymorphism, Method Overloading, Method Overriding, Nested and Inner classes.

Arrays, String and Vector -Arrays : Creating an array, Types of Array - One Dimensional arrays, Two Dimensional array. String – ,String Methods, String Buffer class, Vectors, Wrapper classes,

UNIT-III

Abstract Class , Interface and Packages, Modifiers and Access Control, Default, public private protected, Abstract classes and methods, Interfaces, Packages-Packages Concept, Creating user defined packages, Java Built in packages.

UNIT-IV

Exception Handling- Exception types, Using try catch and Multiple catch, Nested try, throw , throws and finally, Creating User defined Exceptions, File Handling- Byte Stream, character stream, file IO Basics, File Operations -Creating file, Reading file, Writing File.

Text Books:

1. Dongles E.Comet, Compiler Networks & Internet , 2nd edition, Addison Wesley.
2. Darrel Ince& Adam Freeman, Programming the Internet with Java, revised edition-, Addison Wesley.

Reference books:

1. E.Balaguruswami , Programming with Java, Tata MacGraw Hill.
2. Herbert Schildt, The complete reference Java, Tata MacGraw Hill.

BCA-42 ASP.NET

Maximum Marks: 100
Time: 3 hours

External: 70
Internal : 30

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

Course Objectives:

- to study the basics of the asp.net programming with the introduction of .NET framework and .NET class framework with some programming variables, data types, object-oriented terminology, creating objects and classes, overloading methods, constructors, shared methods and more.
- to study the fundamental concepts of Inheritance and interface implement the inheritance i.e. creating base class, properties subclass and by using 'inherit' the keyword; overloading and overriding methods, shadowing, and object interface in detail.
- the concept of namespace includes the common, importing, referencing and creating own namespaces.

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

- learn about .Net Framework.
- learn about ASP.NET HTML controls.
- understand file handling in ASP.NET.
- perform basic coding for writing a webpage using ASP NET.

UNIT-I

Introduction to .Net Framework: Microsoft .net Platform, Design Goals and Overview, .net architecture, Console, environment, IL, JIT, .NET framework class library, Common language runtime, CLR Execution, common type system, common language specification, managed and unmanaged code.

UNIT-II

Introduction to ASP.Net : Features, ASP. NET Language Structure – Page Structure – Page event, Properties & Compiler Directives.

ASP.NET Controls: Using HTML Controls, Using Web Controls, Using Validation controls.

UNIT-III

File Handling: Working with Directories and Files, Read and write file, Using File Upload Control, Transfer of File to a Folder, Restricting the type and size of the Files

UNIT-IV

Database Access: Error Handling, Database Access - Using ADO.NET, Connection Command, DataAdapter, and DataSet, DataReader, Connection Pooling.

Text Books:

1. Hank Meyne , Scott Davis : Developing Web Applications with ASP.NET and C# ,Wiley Computer Publishing
2. Jeffrey Richter, Francesco Balena: Applied .Net Framework Prog. in MS VB.Net, TMH

Reference Books:

1. Herbert Schildt: Complete Reference C#, TMH Publication.
2. Michael Halvorsan: Microsoft Visual Basic.NET step by step, PHI Publication.
3. G.AndewDuthie: Microsoft ASP.Net With C#.Net step by step, PHI Publication.

BCA – 43 COMPUTERGRAPHICS

Maximum Marks: 100

External: 70

Time: 3 hours

Internal : 30

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

Course Objective:

- computer graphics provides the necessary theoretical background and demonstrates the application of computer science to graphics.
- allows students to develop programming skills in computer graphics through programming assignments.

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

- utilize relevant applications of tools and technology in the creation, reproduction, and distribution of visual messages.
- confidently participate in professional design practice and management within a collaborative work environment.
- analyze, synthesize, and utilize design processes and strategy from concept to delivery to creatively solve communication problems.
- employ best practices and management in the design profession and within a collaborative work environment.

UNIT – I

Overview of Computer Graphics: Historical background of Computer Graphics; Applications of Computer Graphics; Display devices: Pixel, Resolution, Aspect Ratio; Raster-Scan Systems and Display : CRT, Refresh Rate and Interlacing; Frame Buffer, Video Controller, Raster-Scan Display Processor, Lookup Table, RGB Color Model, Color CRT monitors; Random-Scan Displays; Flat Panel Display :LCD, Plasma Panel

UNIT – II

Coordinate Representations; Graphics Primitives: Line Drawing Algorithms- DDA Algorithm, Bresenham's Algorithm; Different Line Styles; Circle-Generating Algorithms- Properties of Circles, Circle Drawing using Polar Coordinates, Bresenham's Circle Drawing Algorithm; Ellipse- Generating Algorithms; Anti-aliasing;

UNIT – III

Geometric Transformations: Scaling, Translation, Rotation; Matrix Representations and Homogeneous Coordinates; Rotation Relative to an Arbitrary Point; Reflection; Shearing; Coordinate Transformation; Inverse Transformation; Affine Transformation; Raster Transformation; Composite Transformations; Fixed-point Scaling; Input Techniques: Pointing, Positioning, Rubber-band method, Dragging;

UNIT – IV

Two-Dimensional Viewing: Window-to-Viewport Coordinate Transformation; Zooming; Panning; Clipping: Point Clipping, Line Clipping- Cohen-Sutherland line clipping, Mid-point Subdivision Line Clipping; Polygon Clipping – Sutherland-Hodgeman Polygon Clipping; Text Clipping; Graphics in Three Dimensions: Displays in Three Dimensions, 3-D Transformations; 3-D Viewing : Viewing Parameters, Projections, Parallel and Perspective projection; Hidden Surfaces: Z-Buffer Method, Painter's Algorithm;

Text books:

1. "Computer Graphics", Donald Hearn, M. Pauline Baker, PHI.
2. "Computer Graphics", Apurva A. Desai, PHI, 2010

Reference books:

1. "Principles of Interactive Computer Graphics", Newmann & Sproull, McGraw Hill.
2. "Computer Graphics Principles & Practice", Foley etc. Addison Wesley.
3. "Introduction to Computer Graphics and Multimedia", Anirban Mukhopadhyay, Arup

Chattopadhyay, Vikas.

4. "Fundamentals of Computer Graphics and Multimedia", D.P. Mukherjee, PHI.

BCA- 44 PROGRAMMING LANGUAGES

Maximum Marks: 100

External: 70

Time: 3 hours

Internal : 30

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Course Objective:

- to understand fundamental programming concepts, using an object oriented programming language, to solve substantial problems
- to understand Distinguish language definition from implementation, syntax and parsing from semantics and evaluation.
- to develop, understand, test, and evolve substantial programs using a modern IDE, and associated configuration tools; use programming approaches that avoid common coding errors; practice fundamental defensive programming.

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

- describe the history of programming languages and its evolution to the present stage
- explain the basic concept of object-oriented programming and structure programming.
- use stepwise refinement methodology to develop programs for a number of problems.
- develop, debug and test application programs.

UNIT – I

The Art of Language Design: The Programming Language Spectrum, Why Study Programming Languages, Compilation and Interpretation, Programming, An Overview of Compilation- Lexical and Syntax Analysis, Semantic Analysis and Intermediate Code Generation ,Target Code Generation, Code Improvement.

UNIT – II

Programming Language Syntax: Specifying Syntax: Regular Expressions and Context-Free Grammars- Tokens and Regular, Context-Free Grammars, Derivations and Parse Trees. Scanning- Generating a Finite Automaton, Scanner Code, Table-Driven Scanning, Lexical Errors, Pragmas. Parsing- Recursive Descent, Table-Driven Top-Down Parsing, Bottom-Up Parsing, Syntax Errors. Theoretical Foundations- Finite Automata, Push-Down Automata, Grammar and Language Classes.

UNIT – III

The Notion of Binding Time, Object Lifetime and Storage Management-Static Allocation, Stack-Based Allocation, Heap-Based Allocation, Garbage Collection. Scope Rules-Static Scoping, Nested Subroutines, Declaration Order, Modules, Module Types and Classes, Dynamic Scoping. Implementing Scope-Symbol Tables, Association Lists and Central Reference Tabl, The Meaning of Names within a Scope- Aliases, Overloading, Polymorphism and Related Concepts. Binding of Referencing Environments- Subroutine Closures, First-Class Values and Unlimited Extent, Object Closures. Macro Expansion.

UNIT – IV

Semantic Analysis- The Role of the Semantic Analyzer, Attribute Grammars, Evaluating Attributes, Action Routines, Space Management for Attributes-Bottom-Up Evaluation, Top-Down Evaluation, Decorating a Syntax Tree.

Text Books:

1. Sebessa W. Robert, Concepts of programming languages 4th edition, (Addison Wesley 2000).
2. Appleby Doris & VandeKopple J. Julius, Programming language- paradigm and practice 2nd edition, (Addison Wesley 2000).

Reference Books:

1. Sethi Ravi, Programming languages 2nd edition, (Addison Wesley-2000).
2. Michael L. Scott-" Programming Language Pragmatics", Morgan Kaufmann Publishers,

BCA- 45 MANAGEMENT INFORMATION SYSTEM

Maximum Marks: 100

External: 70

Time: 3 hours

Internal : 30

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

Course Objective:

- to provide information for decision making on planning, initiating, organizing, and controlling the operations of the subsystems of the firm and to provide a synergistic organization in the process.
- to apply sound managerial concepts and principles in the development and operation of information systems.
- to effectively apply systems analysis, IS design and project management concepts.
- to effectively apply technical concepts in information technology.

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

- support the delivery, use and management of information systems within an information systems environment.
- function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
- create systems for finding and storing data and they learn about computer databases, networks, computer security.

UNIT – I

Introduction to system and Basic System Concepts, Types of Systems, The Systems Approach, Information System: Definition & Characteristics, Types of information, Role of Information in Decision-Making, Sub-Systems of an Information system: EDP and MIS management levels, EDP/MIS/DSS.

UNIT –II

An overview of Management Information System: Definition & Characteristics, Components of MIS, Frame Work for Understanding MIS: Information requirements & Levels of Management, Simon's Model of decision-Making, Structured Vs Un-structured decisions, Formal vs. Informal systems.

UNIT – III

Developing Information Systems: Analysis & Design of Information Systems: Implementation & Evaluation, Pitfalls in MIS Development.

UNIT – IV

Functional MIS: A Study of Personnel, Financial and production MIS, Introduction to e-business systems, ecommerce – technologies, applications, Decision support systems – support systems for planning, control and decision-making

Text books:

1. J. Kanter, "Management/Information Systems", PHI.
2. Gordon B. Davis, M. H. Olson, "Management Information Systems – Conceptual foundations, structure and Development", McGrawHill.

Reference books:

1. James A. O'Brien, "Management Information Systems", TataMcGraw-Hill.
2. James A. Senn, "Analysis & Design of Information Systems", Second edition, McGrawHill.
3. Robert G. Murdick & Joel E. Ross & James R. Claggett, "Information Systems for Modern Management", PHI.
4. Lucas, "Analysis, Design & Implementation of Information System", McGrawHill.