

COMPUTER CONCEPTS AND C PROGRAMMING

PART – A

Unit-I

Introducing Computer Systems

The Computer defined, Computers for individual users, Computers for organizations, The parts of a computer system, The information processing cycle, Essential computer hardware.

Interacting with Computer

The Keyboard – The standard keyboard layout, How the computer accepts input from the keyboard, The Mouse, Variants of the mouse. Inputting data in other ways – Devices for the hand, Optical Input Devices, Audiovisual Input Devices.

Video and sound – Monitors, Data projectors, Sound systems, Printing – Commonly used printers - Dot Matrix Printers, Ink Jet Printers, Laser Printers.

7 Hours

Unit-II

Processing Data

Transforming Data into Information: How computers represent data, How computers process data, Factors affecting processing speed, Microcomputer processors, Extending the processor's power to other devices.

Storing Data

Types of storage devices, Measuring and improving drive performance.

6 Hours

Unit-III

Using Operating Systems

Operating system basics – The purpose of operating system, Types of operating system, Providing a user interface, PC operating systems- DOS; Windows –NT workstation, 9X, 2000Professional, XP; Linux for the desktop

Networks and the Internet

Networking basics - The uses of a network, Common types of networks, Network topologies and protocols, What is the Internet?, Internet's major services, Understanding the world wide web, Using E-mail.

7 Hours

Unit-IV

Algorithms and Flowcharts

Algorithms, Flowcharts, Divide and conquer strategy. Writing algorithms and drawing flowcharts for simple exercises – Swapping contents of 2 variables, Largest of given three numbers, Solving a given quadratic equation, Factorial of a given integer

Constants, Variables, and Data types

Characters set, C tokens, Keywords and Identifiers, Constants, Variables, Data types, Declaration of variables.

Operators and Expressions

Arithmetic operators, Relational operators, Logical operators, Assignment operators, Increment and Decrement operators, Conditional operator, Bitwise operators, Special operators, Arithmetic expressions, Evaluation of expressions, Precedence of Arithmetic operators, Type conversions in expressions, Operator precedence and associativity.

6 Hours

PART – B

Unit-V

Managing Input and Output Operations

Reading a character, Writing a character, Formatted Input, Formatted Output

Decision making and Branching

Decision making with *if* statement, Simple *if* statement, The *if...else* statement, Nesting of *if...else* statements, The *else ... if* ladder, The switch statement, The *?:* operator, The Goto statement

7 Hours

Unit-VI

Decision making and Looping

The *while* statement, The *do* statement, The *for* statement, Jumps in Loops

6 Hours

Unit-VII

Arrays

One-dimensional Arrays, Declaration of one-dimensional Arrays, Initialization of one-dimensional Arrays, Two-dimensional Arrays, Initializing two-dimensional Arrays

6 Hours

Unit-VIII

User-defined Functions

Need for User-defined Functions, A multi-function Program, Elements of User-defined Functions, Definition of Functions, Return Values and their Types, Function Calls, Function Declaration, Category of Functions, No Arguments and no Return Values, Arguments but no Return Values, Arguments with Return Values, No Argument but Returns a Value, Functions that Return Multiple Values

7 Hours

Text Books

1. Introduction to Computers, Peter Norton, Sixth Edition, Tata McGraw Hill, 2005
2. Programming in ANSI C, E. Balagurusamy, Tata McGraw Hill – III Edition.

Reference Books

1. Introduction to Computer Science, IITL Education Solutions Ltd., Pearson Education, 2004
2. Fundamentals of Computers, V.Rajaraman, 4th Edition, PHI 2005.
3. Programming Techniques through C, M.G. V. Murthy, Pearson Education, 2002

Question Paper pattern

One full question to be set from each of the 8 units. Student is required to answer 5 full questions selecting at least 2 full questions from each part.