

COMPUTER CONCEPTS AND C PROGRAMMING

Subject Code	: 10CCP13/10CCP23	IA Marks	: 25
Hrs/Week	: 04	Exam Hours	: 03
Total Hrs.	: 52	Exam Marks	: 100

PART – A

UNIT-1

Introduction to Computer Systems, Interacting with the Computer, Computer Organization

The Computer defined, Early history, Basic parts and structure of a computer, Categorizing Computers, Information Processing life cycle, Essential computer hardware, Essential computer software.

Keyboard, Mouse, Inputting data in other ways: Pen-based systems, Data scanning devices, Game controllers, Voice recognition devices, Microphone, Visual input devices, Video and sound, Monitors, Printers, Plotters, Data projectors, Sound systems. Number systems, ASCII, BCD, CPU, Buses, Mother Board, Chip sets, Microprocessors.

7 Hours

UNIT-2

Storage Device Concepts, Operating Systems, Networking

Storage media, Floppy drive, Hard disks, Optical media, CD-ROM, CD-R, CD-RW, DVD-ROM, Recordable DVD.

Software, Custom-made Software, Shrunk-wrapped software, Types of operating systems, Computer processing techniques, Functions of Operating Systems, Management of processor, Memory, Virtual storage, devices, and information.

Networking, Convergence of computing with communications, Networking basics, Need for networking, Basic components of a network.

7 Hours

UNIT-3

Fundamentals of Problem Solving, Introduction to C Language

Creating and running programs, System development, Software Engineering. Introduction to C Language: Background, C Programs, Identifiers, Types, Variables, Constants, Input / Output, Programming example, Software Engineering, Tips and common programming errors.

6 Hours

UNIT-4

Structure of a C Program

Expressions, Precedence and associativity, Side effects, Evaluating expressions, Type conversion, Statements, Programming examples, Software Engineering, Tips and common programming errors.

6 Hours

PART - B

UNIT-5

Functions

Designing structured programs, Functions in C, User-defined Functions, Inter-function communication, Standard functions, Scope, Programming examples, Software Engineering, Tips and common programming errors.

6 Hours

UNIT-6

Selection – Making Decisions, Repetition

Logical data and operators, Two-way selection, Multiway-selection, Concept of a loop, pre-test and post-test loops, Initialization and updating, Event controlled and count controlled loops, Loops in C, Other statements related to looping, looping applications, Recursion, Programming examples, Software Engineering, Tips and common programming errors.

7 Hours

UNIT-7

Arrays, Strings

Concepts, Using arrays in C, Inter-function communication, Array applications, Bubble Sort, Binary search, Two-dimensional Arrays, Multi-dimensional arrays, String concepts, C strings, String input/output, Programming examples, Software Engineering, Tips and common programming errors.

7 Hours

UNIT-8

Basic Concepts of Parallel Programming

Motivating parallelism, Scope for parallel computing, Thread basics, Why threads? OpenMP: A standard for directive – based parallel programming, The OpenMP programming model, Specifying concurrent tasks in OpenMP, Synchronization constructs in OpenMP, Data handling in OpenMP, OpenMP library functions, Environment variables in OpenMP.

6 Hours

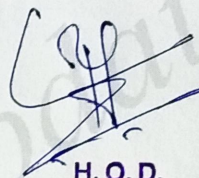
Text Books:

1. Vikas Gupta: Computer Concepts and C Programming, Dreamtech Press/Wiley India, 2009.
2. Behrouz A. Forouzan, Richard F. Gilberg: Computer Science - A Structured Approach Using C, 3rd Edition, Cengage Learning, 2007.
3. Ananth Grama, Anshul Gupta, George Karypis, Vipin Kumar: Introduction to Parallel Computing, 2nd Edition, Pearson Education, 2003.

Reference Books:

1. Peter Norton: Introduction to Computers, 7th Edition, Tata McGraw Hill, 2010.
2. E. Balagurusamy: Programming in ANSI C, 4th Edition, Tata McGraw Hill, 2008.
3. Brian W. Kernighan and Dennis Ritchie: The C Programming Language, 2nd Edition, PHI, 1998.

Web Reference: <http://elearning.vtu.ac.in>



H. O. D.

Dept. Of Chemistry

Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225