BHARATHIDASAN UNIVERSITY, TIRUCHIRAPPALLI – 620 024

ALLIED COMPUTER SCIENCE FOR B.Sc. PROGRAMMES

(For the candidates admitted from the academic year 2016-2017 onwards)

Allied Paper I

Programming in C

Objective: To impart basic knowledge of Programming Skills in C language.

Unit I

Introduction to Computers and their Applications. Computer System Characteristics – Hardware and Software – Types and Generations of Computers – Introduction to I/O and Storage Devices – Number Systems – Flowcharts – Algorithms.

Unit II

Evaluation and Applications of C Structure of a C programme - Data Types – Declarations – Operators – Expressions – Type Conversions – Built-in Functions – Data Input and Output Control Statements : IF, ELSE – IF, GOTO, SWITCH, WHILE – DO, DO – WHILE, FOR BREAK and CONTINUE.

Unit III

Functions – Defining and Accessing Functions – passing parameters to functions – Arguments – recursive functions – Storage Classes – Arrays : Arrays and functions – Arrays and Strings – String functions – String Manipulations.

Unit IV

Pointers – Pointer Declarations - operations on Pointers – pointers to functions – pointers and strings – pointers and arrays – array of pointers structures – structure and pointers – Unions.

Unit V

Data Files – Opening, Closing and Processing files – files with structures and unions-register variables – Bitwise operations – Macros Preprocessors.

Text Book :

1. Computer Today – S.K. Basandra – Galgotia Publications Unit II – V.
2. Programming in C – E.Balagurusamy – Tata McGraw Hill Publication.

Reference Books :

1. Programming with C - Byron S Gottfried – Schaum's Outline Series, Tata McGraw Hill Publications.
2. The Spirit of C – Mullish Cooper – Schaum's Outline Series – Tata McGraw Hill Publications.
3. Let Us C – Yeswant Kanetkar – BPB Publications.

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Allied Paper II

C Programming Lab

1. Solution of a Quadratic Equation (all cases)
2. Sum of Series (sine, cosine, e^x)
3. Coversion of Number System (Decimal to Binary, Decimal to Octal)
4. Largest, Smallest among 'n' numbers (Also use it to find the number of occurrences of a given number)
5. Ascending and Descending order of numbers using Arrays.
6. Sorting of names in Alphabetical order
7. Matrix Operations (Addition, Subtraction, Multiplication – use Functions).
8. Finding factorials, generating Fibonacci Numbers using recursive functions.
9. String manipulations without using string functions
   (String length, String Comparison, String Concatenation, Palindrome Checking, Counting words and lines in String – use function Pointers).

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(For the candidates admitted from the academic year 2016-2017 onwards)

Allied Paper III

Principles of Information Technology

Objective : To Provide the Basic Concepts in Information Technology

Unit I

Introduction to Computer – Classification of Digital Computer System – Computer Architecture – Memory Units – Auxiliary Storage Devices – Input and Output Devices.

Unit II

Introduction to Computer Software – Operating System – Programming Languages – General Software Features and trends.

Unit III

Database Management Systems – Data Processing – Introduction to Database Management System – database design.

Unit IV

Introduction to Telecommunication – Networking – Commmunication System – Distributed System – Internet – Intranet.

Unit V

Multimedia tools – Virtual Reality – E-Commerce – Data warehousing – Data Mining – Applications; Geographical Information System – Computer in Business, Industry, Home, Education and Training.

Text Book :

1. Fundamentals of Information Technology, Alexis Leon And Mathews Leon, Vikas Publishing House Pvt. Ltd, 2009

Reference :

1. Henry C.Lucas, Jr., Information Technology for Management – McGraw Hill (Part – III).
2. Williams, Sawyer, Hutchinson, Using Information Technology – McGraw Hill.

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