

ACHARYA NAGARJUNA UNIVERSITY
B.Sc (Computer Science and IT), 1st Year , II Semester Syllabus
Paper-II : PROGRAMMING IN C
w.e.f academic year 2016-17

UNIT I

Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms – Some more 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 - 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 – Recursion vs Iteration

UNIT III

Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array – Calculating the length of the Array – Operations on Array — Two dimensional Arrays –Operations on Two Dimensional Arrays
Strings: Introduction – Reading Strings – Writing Strings – String Manipulation functions - Array of Strings

UNIT IV

Pointers: Introduction to Pointers – declaring Pointer Variables – Pointer Expressions and Pointer Arithmetic – Null Pointers – Passing Arguments to Functions using Pointer, Dynamic Memory Allocation
Structure, Union, and Enumerated Data Types: Introduction – Nested Structures – Arrays of Structures – Structures and Functions – Self referential Structures – Union – Enumerated Data Types

UNIT V

Files: Introduction to Files – Using Files in C – Reading Data from Files – Writing Data To Files – Detecting the End-of-file – Error Handling during File Operations – Accepting Command Line Arguments – Functions for Selecting a Record Randomly - Remove() – Renaming a File – Creating a Temporary File

REFERENCE BOOKS

1. Introduction to C programming by REEMA THAREJA from OXFORD UNIVERSITYPRESS
2. Programming in C By Rachhpal Singh, kalyani publishers
3. E Balagurusamy: —COMPUTING FUNDAMENTALS & C PROGRAMMING – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
4. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ, 2002.

ACHARYA NAGARJUNA UNIVERSITY
B.Sc (Computer Science and IT) DEGREE EXAMINATION
MODEL PAPER
w.e.f academic year 2016-17

First Year –Second semester
Paper: Programming in C

Time: 3 Hours
Maximum: 75 Marks

SECTION A

Answer any Five Questions

5X15=75 Marks

1. Explain the Generations of Programming Languages?
2. Explain in detail about Operators in C language?
3. Explain Branching and looping statements in C?
4. Call by value and call by reference mechanism with example?
5. What is an Array? Explain different types arrays with Syntax
6. Explain String Manipulation functions with example?
7. a) Difference between structure and union
b) Explain about enumerated data types with example?
8. What is a file in C language? And explain
 - a) Reading data from files.
 - b) Writing data to files.

B.Sc Computer Science/Information Technology (IT) Syllabus Under CBCS
Structure of Computer Science/Information Technology (IT) Syllabus
PROGRAMMING IN C LAB
w.e.f academic year 2016-17

1. Find out the given number is perfect number or not using C program.
2. Write a C program to check whether the given number is Armstrong or not.
3. Write a C program to find the sum of individual digits of a positive integer.
4. A Fibonacci sequence is defined as follows: the first and second terms in the sequence are 0 and 1. Subsequent terms are found by adding the preceding two terms in the sequence.
5. Write a C program to print the Fibonacci series.
6. Write a C program to generate the first n terms of the Fibonacci sequence.
7. Write a C program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.
8. Write a C program to find both the largest and smallest number in a list of integers.
9. Write a C program that uses functions to perform the following:
 - a. Addition of Two Matrices
 - b. Multiplication of Two Matrices
10. Write a program to perform various string operations.
11. Write C program that implements searching of given item in a given list.
12. Write a C program To sort a given list of integers in ascending order.

Instructions to Question Paper Setters

- Eight Questions are to be set, choosing at least one question from each unit of the syllabus (Maximum 2 questions from each unit)
- All the eight questions carry equal marks (i.e 15 marks for each)
- The candidate has to answer any five questions out of eight, the maximum marks is 75
- The questions must be framed within the scope of the syllabus.