

PROGRAMMING IN C AND DATA STRUCTURES

(Common to all branches)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Mention the steps involved in software development method.
(b) Briefly explain the need for software maintenance.
(c) What is an algorithm? Explain with suitable example.
- 2 What is an operator? Explain different operators in C.
- 3 (a) What are the advantages and disadvantages of recursion?
(b) Write a program to find the sum of all floating point elements in an array.
- 4 (a) What is a string variable? How to declare a string variable?
(b) Write a program to count the number of digits, alphabets, white spaces and other characters in a sentence.
- 5 (a) Give the various advantages of bit fields.
(b) Use bit fields to represent the details of a person like his sex, marital status, number of children, age. Write a program to access these contents.
- 6 (a) Discuss the concept of searching errors in reading of files.
(b) Discuss random file handling functions of C language.
- 7 Explain circular queue in detail. Implement the same using C program.
- 8 (a) Discuss the algorithm of quick sort with an example. Give its time complexity.
(b) What is called as external sorting technique? Discuss merge sort algorithmic technique with an example.
