

Code: R7100106**B.Tech I Year (R07) Supplementary Examinations December/January 2015/2016****C PROGRAMMING & DATA STRUCTURES**

(Common to CE, EEE, ECE, CSE, EIE, IT, E.Con.E, CSS, ECC & BT)

(For 2008 Regular admitted batch only)

Time: 3 hours

Max. Marks: 80

Answer any FIVE questions
All questions carry equal marks

- 1 (a) What is an operator? Explain the arithmetic, relational, logical and assignment operators in 'C' language.
(b) Explain switch statement with syntax and example.
(c) Explain the different types of loops in C with syntax and example.
- 2 (a) Explain about I/O formatting functions with example.
(b) Define user define functions with example.
(c) Explain recursive functions.
- 3 (a) Explain how two dimensional arrays can be used to represent matrices.
(b) Explain void and parameter less functions in 'C' with examples.
(c) Write a 'C' program to SWAP two numbers using call by pointers method.
- 4 (a) Describe array of structures and structure within a structure with example.
(b) Explain any two preprocessor directives in 'C'.
(c) Explain unions with example.
- 5 (a) Write a 'C' program to copy data from one file to another file. The name of the source file and the name of the destination file are supplied by the user.
(b) Explain error handling with examples.
- 6 (a) Explain bubble sort with the algorithm.
(b) What is recursion? Write a recursive function for binary search.
(c) Explain merge sort in detail.
- 7 (a) What is a stack? List and implement basic operations of stack using 'C'.
(b) Transfer each of the following infix expression to its postfix form.
(i) $(A+B) * (C \& (D-E) + F) - G$.
(ii) $(A+B) * (C-D) \& E * F$.
(c) Explain:
(i) Circular list (ii) Doubly linked list.
- 8 (a) Explain array representation of binary Tree and write a function to search a given element in a binary search tree using arrays.
(b) Write a C routine to count the numbers of nodes in a binary search tree.
(c) Explain DFS and BFS in graphs.