

CBCS SCHEME

USN

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16/17MCA11

First Semester MCA Degree Examination, Dec.2018/Jan.2019

Data Structures Using C

Time: 3 hrs.

Max. Marks: 80

Note: Answer FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain unformatted I/O statements in C with proper syntax. (08 Marks)
b. Explain all looping control statements with syntax. (08 Marks)

OR

- 2 a. Explain various categories of functions in C. (08 Marks)
b. Define an Array. Explain 1D and 2D arrays with syntax. (08 Marks)

Module-2

- 3 a. Define Pointers. Explain pointers variables and illustrate their usage with examples. (08 Marks)
b. Define structures with syntax. Write a program in C for accessing the member variables of the structure STUDENT. The structure STUDENT has member variables : USN(int) , name (char array) and marks in 3 subjects (int). (08 Marks)

OR

- 4 a. Define Data structures. Explain different types of data structures. (08 Marks)
b. Explain any two built in string functions. Write a C program to compare two strings without using built in functions. (08 Marks)

Module-3

- 5 a. Define Prefix and Postfix expressions. Write a program to convert infix to postfix expressions. (08 Marks)
b. What is Recursion? Write a program to generate n Fibonacci series, using recursion. (08 Marks)

OR

- 6 a. What is QUEUE? Explain various types of queue and operations performed on it. (08 Marks)
b. Write a program in C to implement simple queue. (08 Marks)

Module-4

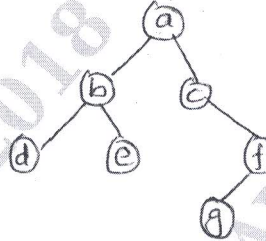
- 7 a. Differentiate Static Vs Dynamic memory allocation. How dynamic memory allocation is done in C? (08 Marks)
b. Explain Circular linked list. Write functions to implement following operations : (08 Marks)
i) Insert front ii) Insert rear.

OR

- 8 a. Explain Dequeue. Give functions for following operations on dequeue using linked list : (08 Marks)
i) Create a node ii) Insert front.
b. Discuss about various applications of linked list. (08 Marks)

Module-5

- 9 a. What is Binary tree? Explain with example different types of binary trees. (08 Marks)
b. Discuss various tree traversal methods. Find inorder, preorder and postorder traversal of following tree. (08 Marks)

**OR**

- 10 a. Explain Sorting. Explain bubble sorting with example. (08 Marks)
b. Write a program in C to implement quick sort. (08 Marks)
