

Reg. No

Name

BCA DEGREE END SEMESTER EXAMINATION - MARCH 2020
SEMESTER 2 : MOBILE APPLICATIONS AND CLOUD TECHNOLOGY

COURSE : 19U2CRBCA6 : DATA STRUCTURES USING C

(For Regular - 2019 Admission & Improvement /Supplementary - 2018/2017/2016 Admissions)

Time : Three Hours

Max. Marks: 75

Section A

Answer any 10 (1 marks each)

1. How do you declare a string?
2. Define recursion
3. What is searching?
4. Define Bubble sort
5. How do queues work?
6. What is the use of circular queue?
7. What is a doubly linked list ?
8. What is the limitation of singly linked list?
9. What is null graph?
10. Explain Root.

(1 x 10 = 10)

Section B

Answer any 8 (2 marks each)

11. Define "Big Omega" notation ?
12. Write a C program to illustrate dynamic memory allocation?
13. Explain the space complexity of two way insertion sort ?
14. What are the advantages of using Binary search?
15. State the rules to be followed during infix to postfix conversions
16. Difference between Array, Stack and Queue.
17. Explain how node of a linked list can be implemented in C?
18. Explain circular linked list with an application?
19. Give an example of incidence matrix?
20. Represent the expression as Tree?
 $((A-C*M-N)*(P/Q))$

(2 x 8 = 16)

Section C

Answer any 5 (5 marks each)

21. Write a C program to generate fibonacci sequence using recursion?
22. Explain quick sort with example.
23. Difference between Array, Stack and Queue.

24. What are the different operations that can be performed on a stack explain with examples?
25. Briefly explain circular linked list and its advantages?
26. Write a C function to add node at the beginning in a linked list?
27. Explain preorder traversal with an example?

(5 x 5 = 25)

Section D

Answer any 2 (12 marks each)

28. Write a program to implement strlen() and strcpy() functions using pointers ?
29. Explain infix to postfix conversion algorithm using stack?
30. Write a C program to implement functions for different cases of deletion operation?
31. Write a program to traverse a binary tree level by level?

(12 x 2 = 24)