B C A DEGREE END SEMESTER EXAMINATION - JULY 2021
SEMESTER 2 : MOBILE APPLICATIONS AND CLOUD TECHNOLOGY
COURSE : **19U2CRBCA6 : DATA STRUCTURES USING C**

(For Regular - 2020 Admission & Improvement / Supplementary - 2019/2018/2017/2016 Admissions)

Time : Three Hours   Max. Marks: 75

PART A
Answer All (1 mark each)

1. The amount of memory needs to run to completion is known as
2. Write the syntax of a pointer declaration.
3. Define Bubble sort
4. What is the time complexity of binary search?
5. .... is a LIFO structure.
6. What is Enqueue?
7. Draw the structure of a doubly linked list?
8. Whta is dynamic memory allocation?
9. What is Directed Graph?
10. What is the max heap property?

(1 x 10 = 10)

PART B
Answer any 8 (2 marks each)

11. What is data structure?
12. How to initialoize a pointer?
13. What is the use of * (asterisk operator)?
14. What is the idea behind selection sort?
15. What is a push operation?
16. What is a Circular Queue?
17. Difference between malloc() and calloc() ?
18. Difference between singly circular linked list and doubly circular linked list?
19. What is a strictly binary tree?
20. Write the Adjascency matrix
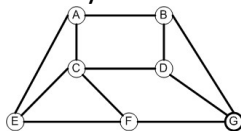
(2 x 8 = 16)

PART C
Answer any 5 (5 marks each)

21. Write a C program to reverse a string using pointers?
22. Explain merge sort with example.
23. Give the postfix form of the following given expression using prenthesis. (i) (A-B*C-D)/(E+F) (ii) ((A+B)*C-(D-E)^(F+G))
24. Evaluate the following postfix expression using stack 2 3 1 * + 9 -
25. Compare array and linked list?
26. Construct Binary tree from :
    Inorder : {4, 8, 2, 5, 1, 6, 3, 7}
    Preorder: {8, 4, 5, 2, 6, 7, 3, 1}

27. Create binary search tree from the data and write inorder traversal?
    3 1 2 7 6 8 4 9

(5 x 5 = 25)

PART D
Answer any 2 (12 marks each)

28. Explain recursive binary search algorithm with example also write the c program.

29. Applications of stacks and queues

30. Write a program to implement queue using singly linked list?

31. What are tree traversals? Discuss three types of traversal procedure with algorithms and examples.

(12 x 2 = 24)