



K25U 3028

Reg. No. :

Name :



**III Semester B.C.A. Degree (C.B.C.S.S. – O.B.E. – Supplementary/
Improvement) Examination, November 2025
(2019 to 2023 Admissions)
General Awareness Course
3A12BCA : DATA STRUCTURES**

Time : 3 Hours

Max. Marks : 40

**PART – A
(Short Answer)**

Answer **all** questions.

(6×1=6)

1. What is an array ?
2. What is the base case in a recursive array traversal ?
3. Convert the equation to postfix : $A + B - (C + D) * E / F$.
4. What do you mean by recursion ?
5. What is the benefit of using linked lists ?
6. What do you mean by FIFO data structures ?

**PART – B
(Short Essay)**

Answer **any six** questions.

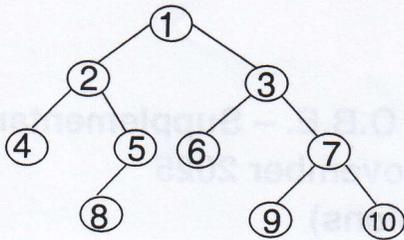
(6×2=12)

7. What is meant by the complexity of an algorithm ?
8. Write an algorithm to implement linear search.
9. Write an algorithm to implement the pop operation of stack using array.
10. What are the advantages of using a circular queue ?
11. Differentiate between a singly linked list and a doubly linked list.
12. Write the steps to delete the middle node of a linked list.

P.T.O.



13. Perform in-order traversal of the binary tree given below.



14. Write the steps to insert a node into a binary search tree.

PART - C
(Essay)

Answer **any four** questions.

(4×3=12)

15. Elucidate the Tower of Hanoi.
16. Briefly explain the concept of polynomial addition.
17. Explain the binary search tree with a suitable example.
18. Write a note on the circular linked list.
19. Write the function or algorithm to implement operations on a queue using a linked list.
20. Explain any three applications of stack.

PART - D
(Long Essay)

Answer **any two** questions.

(2×5=10)

21. Write an extensive note on merge sort.
22. Explain the implementation of stack using array.
23. Explain various operations on a linear linked list.
24. Explain tree traversal with an example.