D 111967   (Pages : 2)   Name.....................................

Reg. No...............................

THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2024

Information Technology

BIT 3B 05—DATA STRUCTURES USING C++

(2019—2023 Admissions)

Time : Two Hours   Maximum : 60 Marks

Section A (Short Answer Type Questions)

Each correct answer carries a maximum of 2 *marks.*

(*Ceiling* 20 *Marks*)

1. List out algorithm techniques.

2. What is worst-case complexity ?

3. What do you mean by top down and bottom up design ?

4. How many numbers of elements are in array Al-1 : 25]?

5. Convert A + (B*C-(D/E-F)*G) into postfix representation.

6. What is the significance of NULL pointer in a linked list ?

7. Define circular queues.

8. Why Queue is called FIFO list ?

9. What are the steps involved in deleting the first node from a linked list ?

10. Describe Array implementation of Polynomial representation.

11. What you meant by depth of a tree ?

12. Briefly explain Heap sort.

Turn over

Section B

Each question carries 5 *marks.*

(*Ceiling* 30 *marks*).

13. Compare and contrast linear search and binary search techniques.

14. Define queues and explain different types of queues.

15. Explain the concept of stacks along with their implementation in memory.

16. Explain complete binary tree with an example ?

17. Describe the method for postorder traversal with a diagram.

18. Explain Bubble sort algorithm.

19. What is hashing ? Explain with suitable example ?

Section C (10 marks)

Answer any **one** *question.*

20. Discuss insertion sort algorithm. Use insertion sort mechanism to sort the list :

25, 15, 30, 9, 99, 20, 26, 23.

21. Explain Binary tree traversals with examples and it's traversed diagrams.