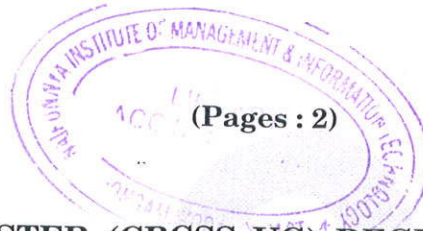


132181

D 12005



(Pages : 2)

Name.....

Reg. No.....

**THIRD SEMESTER (CBCSS-UG) DEGREE EXAMINATION
NOVEMBER 2021**

Computer Science

BCS 3B 04—DATA STRUCTURES USING C

(2019—2020 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A

*Answer atleast **eight** questions.*

Each question carries 3 marks.

All questions can be attended.

Overall ceiling 24.

1. What are data structures ? Examples.
2. Explain the string operation, "Concatenation".
3. How to represent a one dimensional array in memory ?
4. What are the advantages of dynamic memory allocation ?
5. Specify one of the applications of a linked list.
6. What is the significance of the term "top of the stack" ?
7. Explain the procedure to add a new element in to a linear queue.
8. What are priority queues ?
9. Define a binary tree data structure with example.
10. Explain in-order tree traversal procedure.
11. What is directed graph ?
12. What is the basic concept of a linear search ?

(8 × 3 = 24 marks)

Section B

*Answer atleast **five** questions.*

Each question carries 5 marks.

All questions can be attended.

Overall ceiling 25.

13. What are the features of a good algorithm ? Discuss the complexity measures.
14. What are sparse matrices ? Explain its memory representation and operations.

Turn over

15. Develop the algorithm to insert a node in a singly linked list.
16. What is recursion? Explain the requirement of a stack in recursion process.
17. What is circular queue? Explain the procedure to add a new element in to a circular queue.
18. Explain the binary tree representation in memory using arrays and linked list.
19. Explain the selection sort procedure with example.

(5 × 5 = 25 marks)

Section C

Answer any one question.

Each question carries 11 marks.

20. What is linked list representation of queue in memory? Develop the implementation algorithms.
21. What are binary search trees? Develop the algorithm to create a binary search tree in memory.

(1 × 11 = 11 marks)