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(Pages : 2)

Name.....

Reg. No.....

**FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2024**

Computer Science

CSC 4C 04—DATA STRUCTURE USING C PROGRAMMING

(2019 Admission onwards)

Time : Two Hours

Maximum : 60 Marks

Section A (Short Answer Type Questions)*Answer all questions.**Each correct answer carries a maximum of 2 marks.**Ceiling 20 marks.*

1. Define data structure.
2. What is Algorithm ?
3. What are all the different operations on array ?
4. Name the different types of queue.
5. What is Sorting ?
6. What is ADT ?
7. Explain singly linked list.
8. What is time complexity of an algorithm ?
9. Write the algorithm for PUSH operation of stack.
10. What is overflow condition in queue ?
11. Name any two applications of stack.
12. What are all the characteristics of data structure ?

Turn over

Section B (Short Essay Type Questions)

Answer all questions.

Each correct answer carries a maximum of 5 marks.

Ceiling 30 marks.

13. Explain time complexity and space complexity of an algorithm.
14. What is Array ? Explain 2D and multidimensional arrays.
15. Explain the definition, creation and operations of linked list.
16. Define stack. Explain the different operations on stack with algorithm.
17. Explain bubble sort.
18. Compare the different sorting methods and explain how to implement it.
19. Explain binary search.

Section C (Essay Type Questions)

*Answer any **one** questions, correct answer carries 10 marks.*

20. Explain the implementation of stack using array.
21. What is Searching ? Explain the different types of searching.

(1 × 10 = 10 marks)