

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BFMS-441

M.Sc. (Final) Examination, 2023

COMPUTER SCIENCE

Paper - MCS-202

(Data Structure)

Time : 3 Hours]

[Maximum Marks : 50

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 3 × 5 = 15)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

Section-C

(Marks : 5 × 3 = 15)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

Section-A

1. (i) What is linked list ?
- (ii) What is ADT ?
- (iii) What is Priority Queue ?

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- (iv) What is Array ?
- (v) What is Binary Search ?
- (vi) Define Radix Sort.
- (vii) Define Binary tree.
- (viii) What is B-Tree ?
- (ix) What is Graph ?
- (x) Define open and close walk in Graph.

Section-B

2. Explain time and space complexity.

Or

Explain Doubly linked list. Write an algorithm to insert and delete an element in Doubly linked list.

3. What is Stack ? Write an algorithm to push and pop operation in stack.

Or

What is Circular queue ? Write an algorithm to insert and delete element from circular queue.

4. Defference between Linear and Binary search explain with example .

Or

Explain Quick sort with example.

5. Explain Tree traversal :

- (a) Inorder
- (b) Preorder
- (c) Postorder

Or

Explain AVL Tree with example.

6. What is Graph ? Explain the types of graph.

Or

Explain Representation of graph.

Section-C

7. What is Algorithm ? Explain efficiency and analysis of algorithm.
8. Explain Double ended queue.
9. Explain Bubble sort with example.
10. What is Binary Tree ? Explain its types and write application of Binary tree.
11. Explain Depth first traversal and Breadth first traversal with example.