

TE sem II 'C' scheme Semester 2025

Time: 3 Hours

Total Marks: 80

N.B.:1. Question No. 1 compulsory.

2. Attempt any Three out of remaining Five questions.
3. Figures to the right indicate full marks.
4. Draw neat diagram wherever necessary.
5. Assume suitable data if required.

ETC

13/6/25

1. Attempt any four out of five
 - A) How to evaluate expressions using stack? Justify with algorithm. 05
 - B) How stack is implemented? 05
 - C) What are different applications of data structures? 05
 - D) What are characteristic of algorithm? 05
 - E) What is a graph? How graph is represented? Justify 05
2. Attempt any two out of three
 - A) How to add new node at the start of singly linked list and delete node at end of singly linked list? Justify with algorithm and example. 10
 - B) How linked lists are used in applications 10
 - C) Justify different types of linked list with neat diagrams. 10
3. Attempt any four out of five
 - A) Discuss two applications of a graph in details. 05
 - B) Justify different types of trees with examples. 05
 - C) Compare graph and tree with justifications 05
 - D) How queue is implemented? Justify with example and diagram. 05
 - E) Justify standard operations performed on data structures. 05
4. Attempt any two out of three
 - A) What is traversing of a graph? Discuss with examples different techniques for traversing of graph. 10
 - B) What is traversing of a tree? Discuss with examples different techniques for traversing of tree. 10
 - C) What is BST? How data is modified and data is deleted from BST? Justify with example. 10
5. Attempt any two out of three
 - A) Explain hash table? How hashing is performed using hash functions? 10
 - B) What collision in hashing technique? Explore different techniques to resolve collision? 10
 - C) How queue is classified? Justify with examples and diagrams. 10
6. Attempt any two out of three
 - A) Compare different types of sorting algorithms. 10
 - B) Compare different types of searching algorithms. 10
 - C) Compare stack and queue. 10