DCOM–317

M.Sc. (IIIrd Semester)

Examination Jan., 2023

COMPUTER SCIENCE

Paper – FS-COMP-MSC-CS-CC-301

(Data Structures)

Time : 3 Hours]   [*Maximum Marks : 40*

The question paper contains three Sections.

| Section–A | (Marks : 1 × 10 = 10) |

Note :–   Answer all *ten* questions (Answer limit **50** words). Each question carries **1** mark.

| Section–B | (Marks : 3 × 5 = 15) |

Note :–   Answer any *five* questions by selecting at least *one* question from each Unit (Answer limit **200** words). Each question carries **3** marks.

| Section–C | (Marks : 5 × 3 = 15) |

Note :–   Answer any *three* questions by selecting *one* question from each Unit (Answer limit **500** words). Each question carries **5** marks.

Section–A

1.   (i)   Define Time Complexity.

(ii) Define Space complexity.

(iii) Define link list.

(iv) Define Stack.

(v) Define Queue.

(vi) Define Circular queue.

(vii) What is Tree ?

(viii) What is Binary Tree ?

(ix) What is Graph ?

(x) What is Directed Graph ?

Section–B

Unit–I

2. Describe efficiency and analysis algorithm.

3. Describe Linear list.

4. Describe Two way list.

Unit–II

5. Describe infix operation with suitable example.

6. Describe prefix operation with suitable example.

7. Describe priority queue.

Unit–III

8. Describe inorder traversal with suitable example.

9. Describe preorder traversal with suitable example.

10. Describe B-tree with appropriate diagram.

Section–C

Unit–I

11. Explain basic operation on linked list.

12. Explain application of linked list.

Unit–II

13. Explain linked representation of stack.

14. Explain linked representation of queue.

Unit–III

15. Explain AVL tree with suitable example.

16. Explain Breadth First Search.