

Anjuman Islam Janjira Degree College of Science Murud-Janjira, Raigad-402401 Affiliated to University of Mumbai	
Class: -S.Y.B.Sc. C.S.	Subject:- Data Structures
Semester:- III	Vertical:- Major (MJ7)
Exam Event:- Winter 2025 (SH)	Marks:- 30
Date: - 14/10/2025	Duration: - 01:00 Hour

- N.B. –**
- 1 – All questions are compulsory.
 - 2 – All questions have internal choice.
 - 3 – Figures to the right indicate full marks.



Q1. Answer the following question. (Any 2 out of 4)

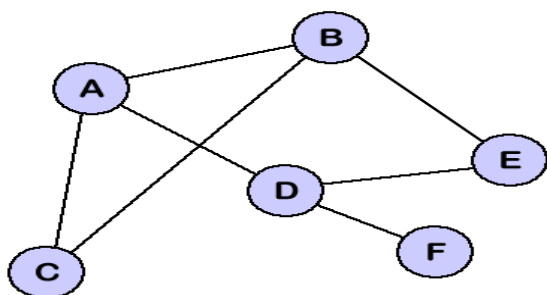
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- 1) Discuss Circular Queue and demonstrate enqueue() and dequeue() operations.
- 2) Use a Singly linked list to show how Traversing and Searching operations are carried out.
- 3) Write down the application of linked list like polynomial equation. Perform addition of two polynomials.
- 4) Convert the following expression prefix to postfix: +V-W*X/YZ.

Q2. Answer the following question. (Any 2 out of 4)

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- 1) Illustrate heaps and their different types.
- 2) Define Graph and Show graph representation using adjacency list and adjacency matrix.



- 3) Discuss in detail binary search tree and balanced binary search tree.
- 4) Describe priority queue and write its applications.

Q3. Answer the following question. (Any 2 out of 4)

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- 1) Discuss the properties of a binary tree with examples of full binary tree and perfect binary tree.
- 2) Define hashing with its advantages and disadvantages.
- 3) Describe graphs and their types.
- 4) Define Data Structures and list the types of Data Structures.