

Quiz-1 Examination: Summer-2025

Course Code: CIS 212 (Batch: 20)

Course Title: Algorithm

Time: 30 Minutes

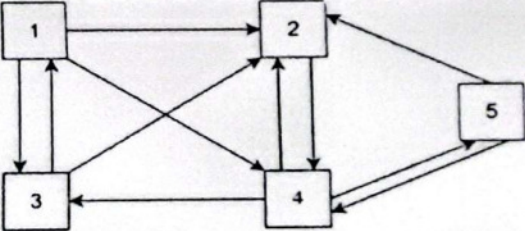
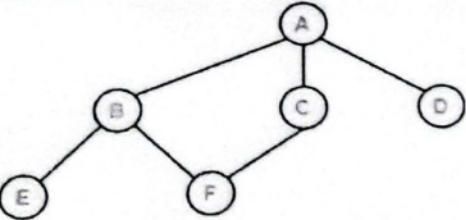
Total Marks: 15

1.	What is complexity? Determine the time complexity of the following code using Big-O notation. A. <pre>for (int i = 0; i < m; i++) { for (int j = 0; j < n; j++) { for (int k = 0; k < 1000; k++) { cout << i * j * k << endl; } } }</pre> B. <pre>for (int i = n; i > 0; i /= 2) { for (int j = 0; j < n; j++) { cout << i + j << endl; } }</pre>	5
2	Trace the steps to sort [38, 27, 43, 3, 9, 82, 10] using Merge Sort . Show the recursion tree for splitting and merging.	5
3	Is Merge Sort an InPlace algorithm? Give a comparative analysis of Insertion, Merge & Quick Sort for: A. Best Case. B. Worst Case.	5

Quiz-2 Examination: Summer-2025
Course Code: CIS 212 (Batch: 20)
Course Title: Algorithm

Time: 30 Minutes

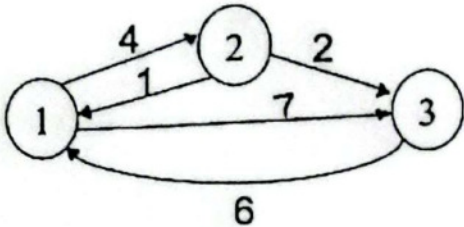
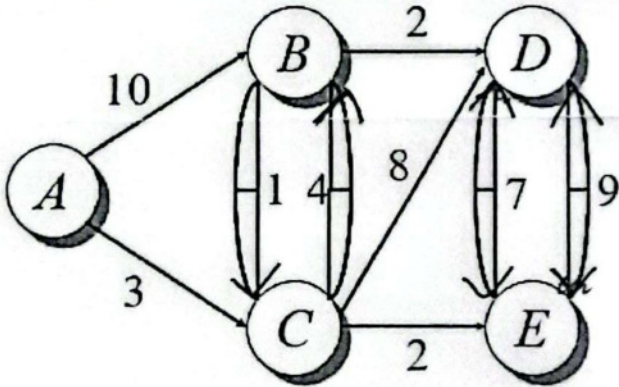
Total Marks: 15

1.	A binary tree T has 9 nodes. The inorder and preorder traversals of T yield the following sequences of nodes: Inorder: E A C K F H D B G Preorder: F A E K C D H G B I. Draw the tree T. II. Find the order of tree T. III. Listed the leaf nodes of tree T. IV. Listed the siblings of node K. V. Show the internal vertices of the tree.	5
2	Define DAG(Directed Acyclic Graph). Construct an adjacency matrix and adjacency list for the directed graph. 	5
3	 Apply Breadth First Search (BFS) and Depth First Search(DFS) algorithm and find the order of visiting nodes. Start Node= A.	5

Quiz-3 Examination: Summer-2025
Course Code: CIS 132 (Batch: 20)
Course Title: Algorithm

Time: 30 Minutes

Total Marks: 15

1.	 Compute the initial matrices $A^{(0)}$ and final matrices $A^{(k)}$ to determine the all pair shortest paths using Floyd Warshall Algorithm.	5
2	How does the Bellman-Ford algorithm detect negative-weight cycles? Explain the condition used for this check. What do you mean by Relaxation? Write the pseudocode for Relaxation.	5
3	 Apply Dijkstra algorithm on the given graph. Source node=A. Show the <u>Queue</u> states and Order of visiting nodes.	5