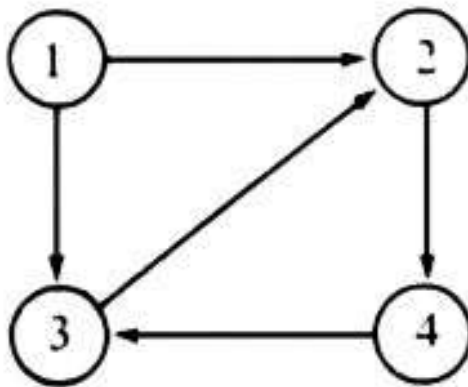


MODEL QUESTION PAPER - II

I. Answer any ten questions. Each question carries two marks.

(10 X 2=20)

1. Define algorithm.
2. Define order of growth.
3. What is divide and conquer technique.
4. Write the time complexities of
 - (i) Binary search
 - (ii) Max min
5. What is meant by feasible solution?
6. What are the types of greedy techniques?
7. List any two applications of minimum spanning tree.
8. Define the terms: i.Cyclic graph ii.Degree of node
9. Write the adjacency matrix of the following graph.



10. Name the different graph traversal techniques.
11. State N-Queens problem.
12. Define graph coloring.

SECTION-B

II. Answer any five questions. Each carries 10 marks.

(5 X 10 = 50)

13. a. Explain asymptotic notations.

b. Write an algorithm for general method of backtracking.

14. a. Write an algorithm for finding maximum and minimum of a list of elements.

b. Trace the maxmin algorithm for the given set of data.

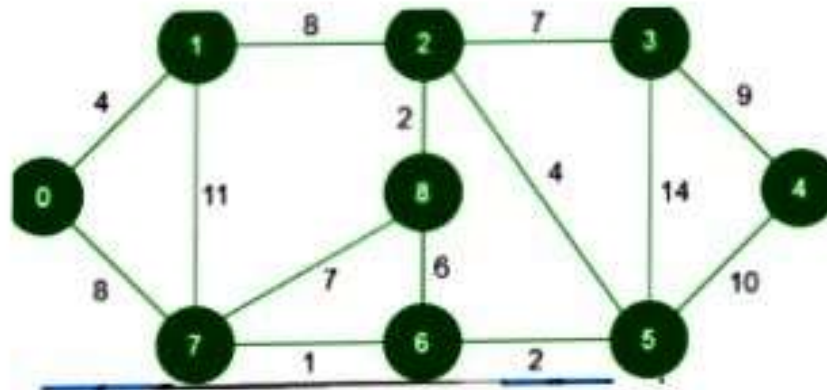
90, 67, 34, 88, 94, 40

15. a. Explain sum of subsets problem.

b. Write the control abstraction of Greedy techniques.

16. a. For the knapsack problem, $n=3, m=20, (p_1, p_2, p_3)=(25, 24, 15)$ and $(w_1, w_2, w_3)=(18, 15, 10)$. Find the feasible solution and optimal solution.

b. Find the minimum spanning tree using Kruskal's algorithm.



17. Find the minimum cost path from s to t in the multistage graph using forward approach.

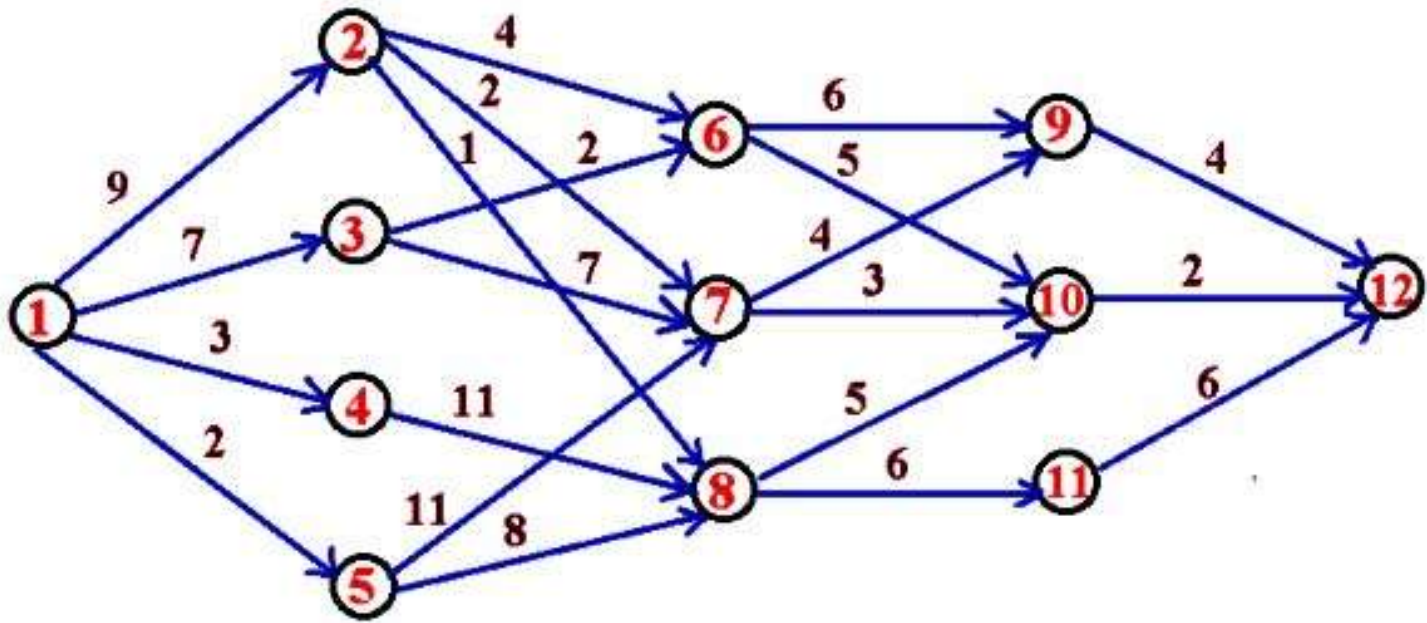
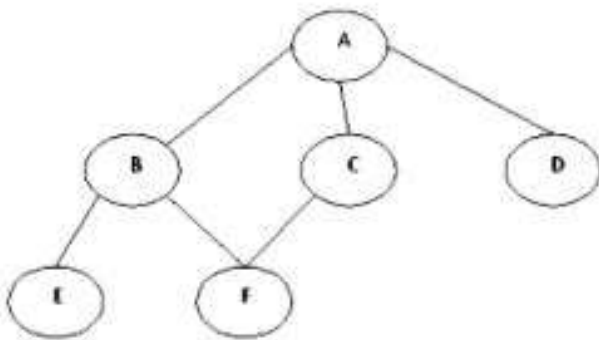
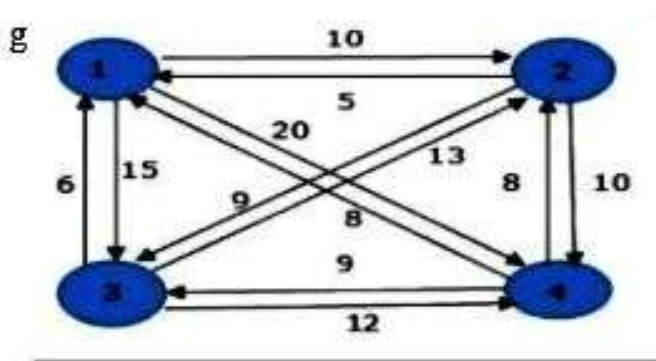


Fig-1

18. a Explain DFS algorithm.
 b. Traverse the following graph using DFS.



19. Find the minimum cost for a travelling sales person using dynamic programming for the following



20. a. Solve the job sequencing problem with number of jobs $n=5$. Their profits are $(p_1, p_2, p_3, p_4, p_5) = (1, 5, 20, 15, 10)$ and deadlines are $(d_1, d_2, d_3, d_4, d_5) = (1, 2, 4, 1, 3)$.
- b. Write recursion algorithm for post order traversal.