



Class: II/IV B.Tech.(CSE/CB/DS) 2nd Sem
Subject: DAA

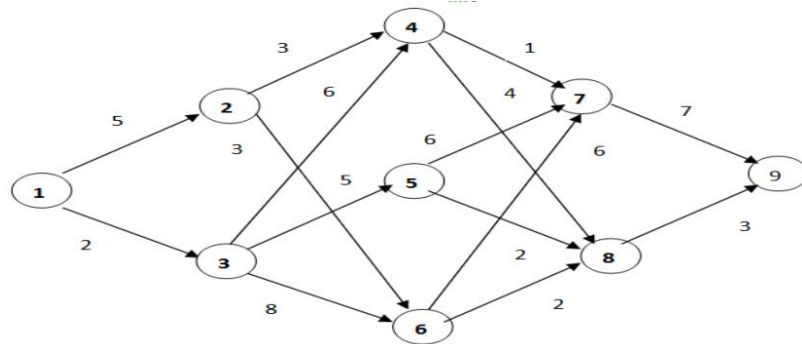
Max.marks:10m.
Time: 45mins.
Date: 28/07/2022

PART-A (6M)

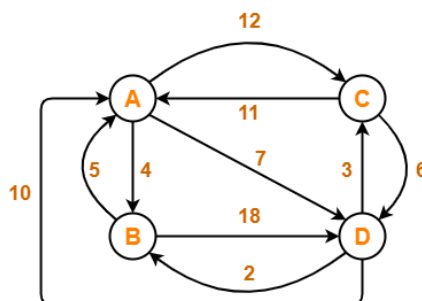
1. Solve the following 0/1 knapsack instance $n=4$, and $M=8$, p_i and w_i are as shown below.

| | | | | |
|-------|---|---|---|---|
| p_i | 1 | 2 | 5 | 6 |
| w_i | 2 | 3 | 4 | 5 |

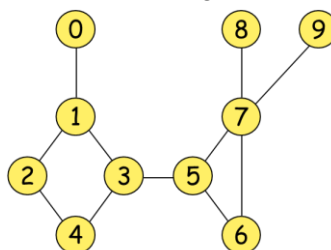
2. Solve the following Multi-stage graph problem using forward and backward approach.



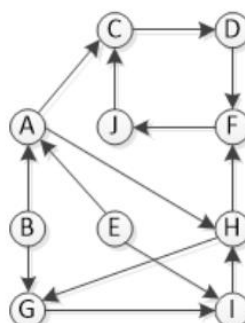
3. Design a three stage system with device types D1, D2, D3. The costs are Rs. 30, Rs. 15 and Rs. 20 respectively. The cost of the system is to be no more than Rs. 105. The reliability of each device type is 0.9, 0.8 and 0.5 respectively.
4. Solve the following Longest Common subsequence problem using dynamic Programming.
Determine an LCS of $\langle 1, 0, 0, 1, 0, 1, 0, 1 \rangle$ and $\langle 0, 1, 0, 1, 1, 0, 1, 1, 0 \rangle$.
5. Solve the following travelling sales person problem using Dynamic Programming.



6. Find the Bi-connected Components of the following graph. Consider starting vertex as 3.



7. Find the Strongly connected Components of the following graph. Consider starting vertex as A.





A.Y: 2021-22

Department of Computer Science and Engineering,
Department of Cyber Security & Department of Data Science
BAPATLA ENGINEERING COLLEGE, BAPATLA
(AUTONOMOUS)

Second Assignment Examination

Class: **II/IV B.Tech.(CSE/CB/DS) 2nd Sem**
Subject: **DAA**

Max.marks:**10m.**
Time: **45mins.**
Date: **28/07/2022**

PART – B (1M)

1. Define Principle of optimality.
2. Define DFS.
3. Define BFS.
4. Specify the applications of DFS.
5. Specify the applications of BFS.
6. Distinguish the breadth- and depth-first searches.
7. Define Biconnected Graph.
8. Define Biconnected Components.
9. Define strongly connected graph.
10. Define strongly connected components.
11. Define articulation point.
12. Specify the graph traversal techniques.
13. Differentiate Dynamic and greedy approaches.
14. Differentiate Dynamic and Divide and Conquer approaches.
15. What is traveling salesperson problem.
16. Define 0/1 knapsack problem.
17. What is multistage graph problem?
18. Define reliability design problem.
19. Define longest common subsequence problem.
20. What is **dominance rule**.