AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)

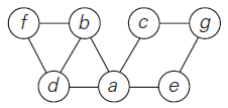
Fall 2022-23, CSC 2211: Algorithms, Assignment No.: 02

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| --- | --- |
| **Name:** | **ID:** |
| **Signature** | **Section:** |

1. Use dynamic programming to find the optimal solution to the 0/1 knapsack problem for a given set of items and knapsack capacity = 16 kg.

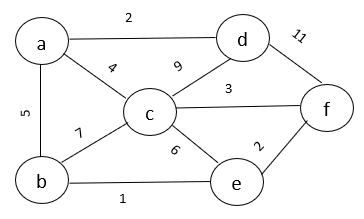
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| --- | --- | --- | --- | --- |
| Item | 1 | 2 | 3 | 4 |
| Weight | 9 | 6 | 7 | 3 |
| Value | 10 | 6 | 5 | 1 |

1. Traverse the following graph by breadth-first search algorithm and show the necessary simulations.

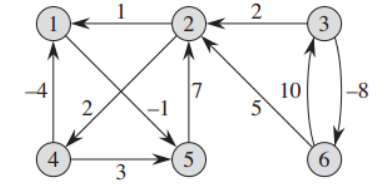


1. Determine the minimum cost spanning tree using Prim’s algorithm for the weighted graph shown

below.



1. Run the Floyd-Warshall algorithm on the weighted, directed graph of figure below. Show the matrix that results for each iteration of the outer loop.



1. Apply the Topological Sort algorithm in the following DAG.

