Assignment-2

Max Marks: 15 Due date: 1 Dec 2021 (11: 59 PM)

1. (2 marks) Given a graph (0-1 adjacency matrix) and a coloring/labelling to the vertices of , verify that the coloring is valid or not.
2. (2 marks) Given a graph (0-1 adjacency matrix), verify is bipartite graph or not.
3. (2 marks) Given a bipartite graph (0-1 adjacency matrix), verify is there any complete matching from to (Hint: use Hall’s marriage theorem).
4. (3 marks) Given a graph (0-1 adjacency matrix), find the number of connected components in using DFS method and display the vertices in each component as well.
5. (3 marks) Given a graph (0-1 adjacency matrix), and a designated root (a vertex of ), find the levels of all the nodes in the spanning tree rooted at obtained by applying BFS method.
6. (3 marks) Given a weighted graph , find the cost of the minimum spanning tree using Kruskal’s algorithm.