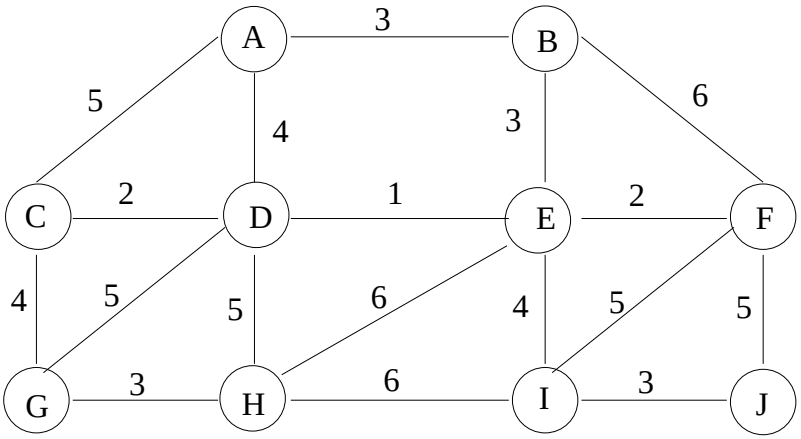
ITCS-6114/8114: Algorithms and Data Structures
Quiz 8

Name:
Student ID:

1. Kruskal's algorithm for Minimum Spanning Trees is a greedy algorithm that maintains a forest whose vertices are those in the original graph. At each iteration, it selects the least-weight edge that connects two distinct components (so there are no cycles in the graph).

   (a) Find and draw a minimum spanning tree for the graph shown below using Kruskal's algorithm.



   (b) Compute the weight of the resulting minimum spanning tree.

   (c) Does this graph have a unique minimum spanning tree?

   (d) If the weight of edge (B, F) was changed to 3, does the modified graph have a unique minimum spanning tree? Justify your answer.