Department of CSE, UIU; Spring 2024

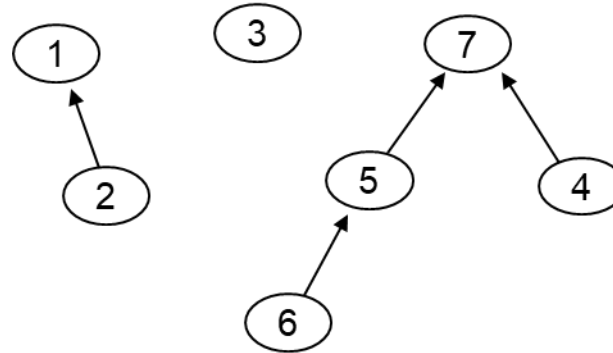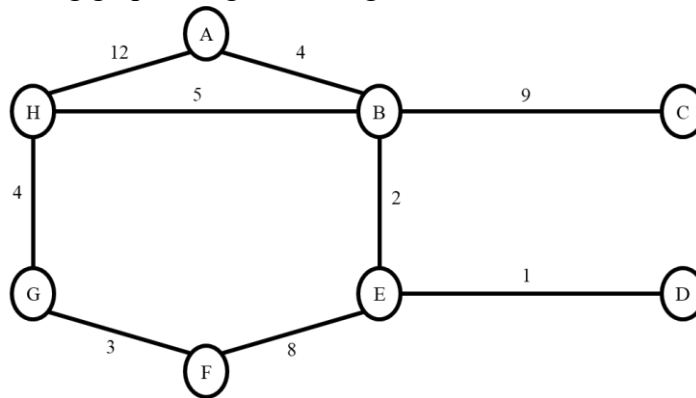## Data Structure and Algorithms-II; CSE 2217

Assignment-2

Show all the steps where applicable

1. Given the following disjoint sets, perform Union (1,3) and Union (1,7) *union-by-rank* operations. Draw the resulting tree. Next, perform *Find(2)* operation using *path-compression*, and again draw the resulting tree.

   (2 marks)

2. Find the MST from the following graph using Prim's algorithm.   **(1 marks)**

3. Find the least-cost paths from source node s for all vertices present in the following graph using Dijkstra's algorithm.   **(2 marks)**