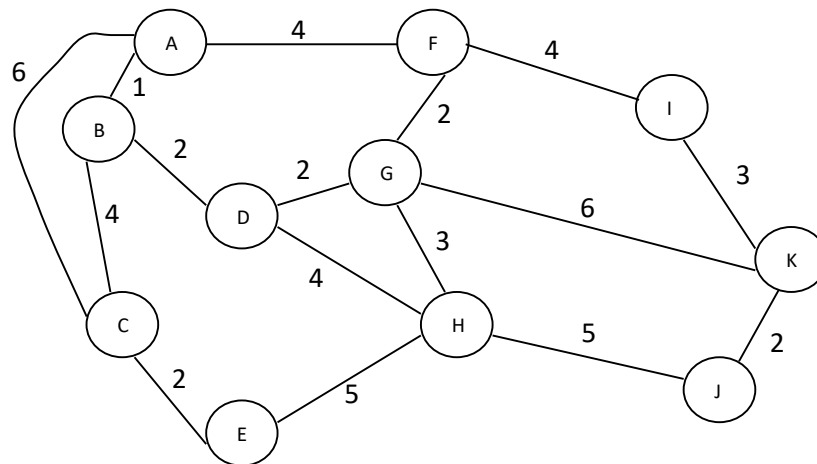
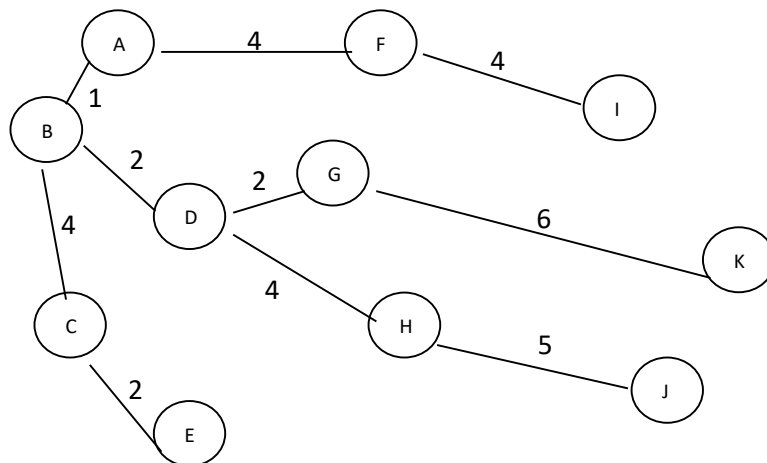


**Question** [2 marks]

Consider the following weighted graph  $G$ . Find the single-source shortest paths, using Dijkstra's algorithm, from vertex  $A$  to every other vertex. If at any time there is more than one vertex outside the growing tree that is the current shortest path from  $A$ , pick the one that leads to the vertex which comes first alphabetically. Draw the tree,  $T$ , corresponding to the shortest paths from  $A$ , below and give the order in which Dijkstra's algorithm adds the vertices to it.

**G:****T:**

**Order of vertices:**    A    B    D    F    C    G    E    H    I    K    J