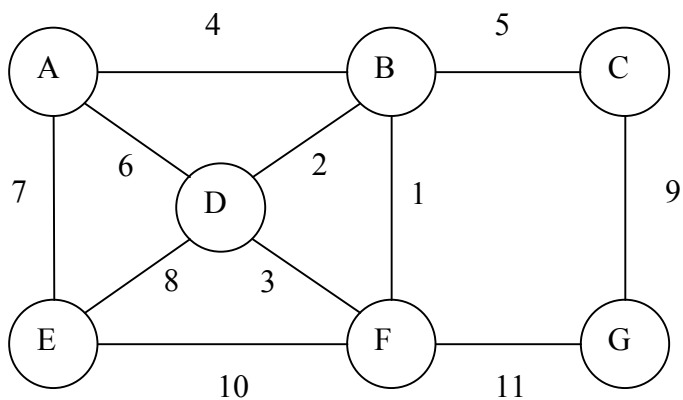
7. (a) Define a *minimum spanning tree* M for a weighted graph G. [4 marks]

(b) Describe, using pseudo-code, Kruskal's Algorithm for calculating the minimum spanning tree for a weighted graph. State clearly any assumptions you make. [7 marks]

(c) For the following graph, find a minimum spanning tree using Kruskal's Algorithm. Show your working clearly. [8 marks]



(d) For a graph with n nodes and m edges, what is the worst case time complexity for Kruskal's algorithm? Justify your answer. [5 marks]