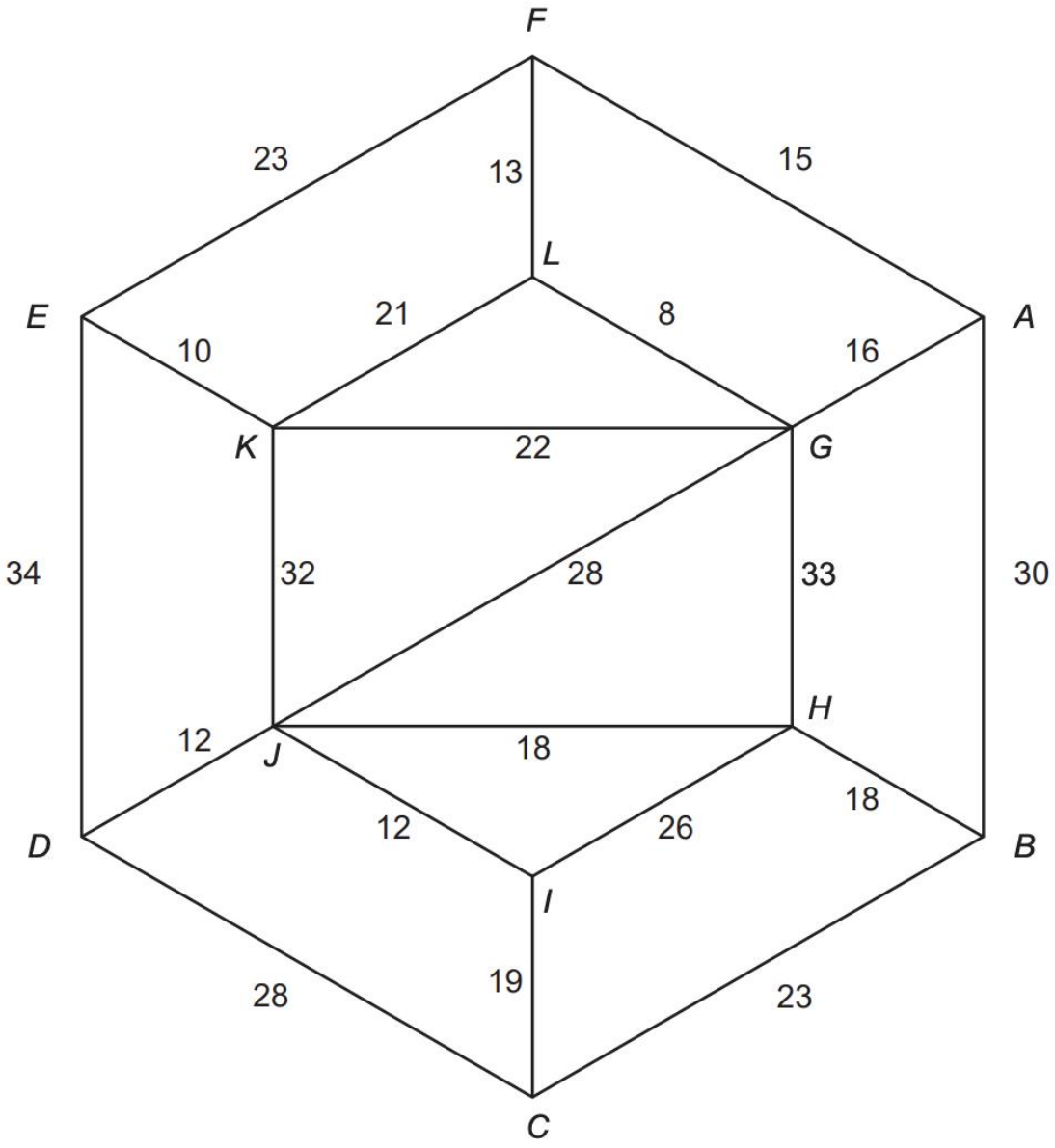
Question 5 **(7 marks)**

A communication wi-fi network is to be installed to service a shopping centre connecting 12 shops located at vertices *A*, *B*, *C*, *D*, *E*, *F*, *G*, *H*, *I*, *J*, *K* and *L*. The only practical connections between vertices are shown on the following network.

The number on each edge is the quoted price, in hundreds of dollars, for the direct link between the vertices.



(a) A minimal spanning tree is to be used to determine the minimum cost of this installation.

(i) Show clearly on the network the minimum spanning tree solution. (3 marks)

(ii) Determine the minimum cost. (2 marks)

(b) Due to further construction at the shopping centre, edge *GJ* is now not feasible. Explain how this will change the solution for part (a). (2 marks)