**2.**

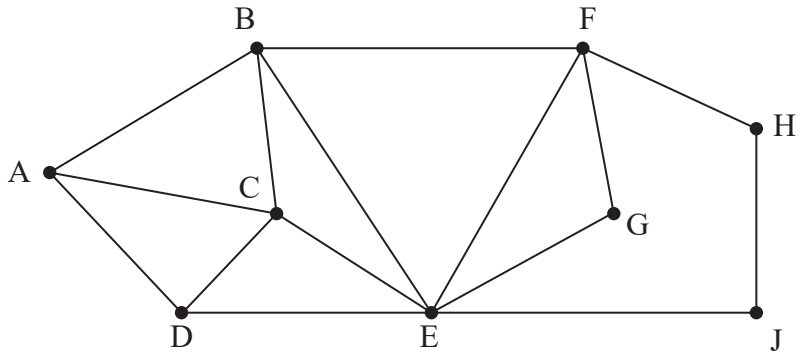



**Figure 1**

Figure 1 shows a graph, T.

(a) Write down an example of a path from A to J on T.

**(1)**

(b) State, with a reason, whether A – B – C – D – E – G – F – H – J is an example of a tour on T.

**(1)**

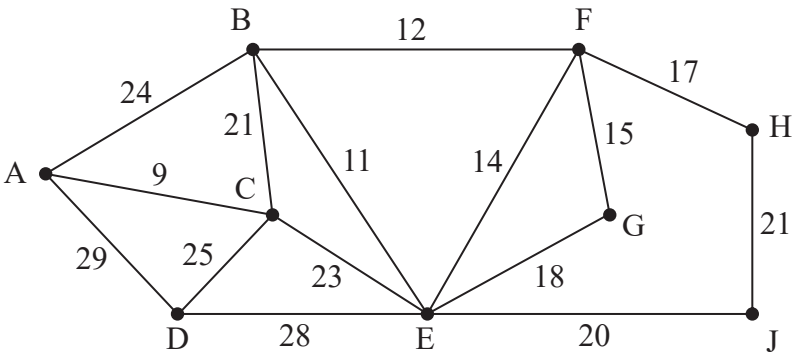



**Figure 2**

The numbers on the 15 arcs in Figure 2 represent the distances, in km, between nine vertices, A, B, C, D, E, F, G, H and J, in a network.

(c) Use Kruskal's algorithm to find the minimum spanning tree for the network. You should list the arcs in the order in which you consider them. In each case, state whether or not you are adding the arc to the minimum spanning tree.

**(3)**

(d) Draw the minimum spanning tree using the vertices given in Diagram 1 in the answer book.

**(1)**

(e) State the weight of the minimum spanning tree.

**(1)**

**(Total 7 marks)**