5.

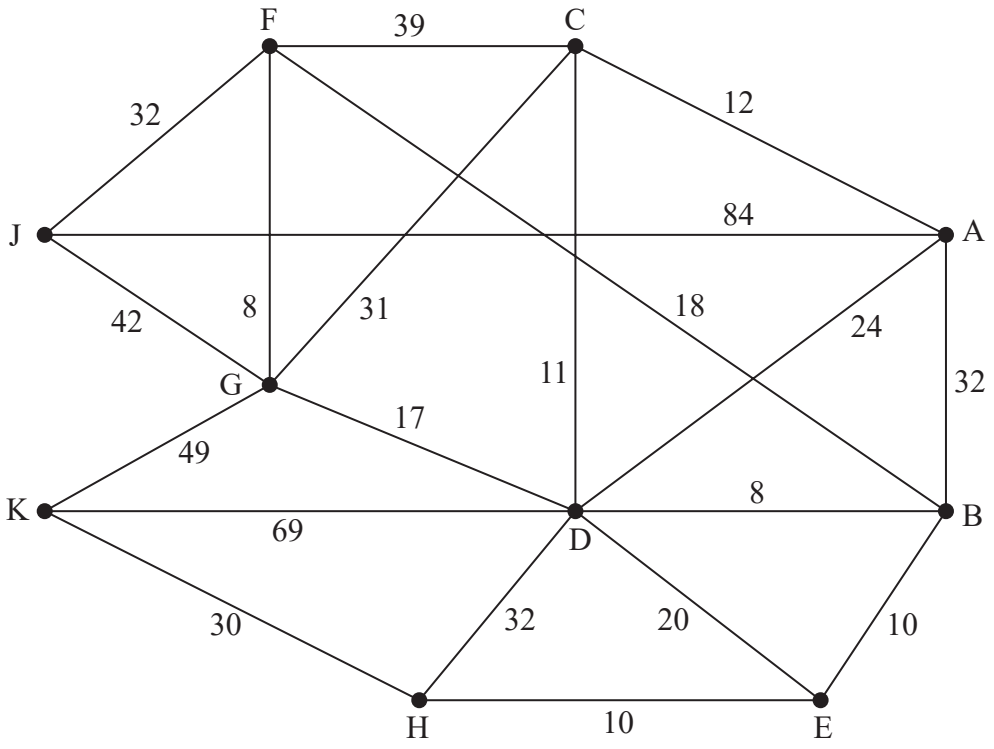


Figure 4

Figure 4 represents a network of roads. The number on each arc represents the length, in miles, of the corresponding road. Tamasi, who lives at A, needs to collect a caravan. Tamasi can collect a caravan from either J or K.

Tamasi decides to use Dijkstra's algorithm once to find the shortest routes between A and J and between A and K.

(a) State, with a reason, which vertex should be chosen as the starting vertex for the algorithm.

(2)

(b) Use Dijkstra's algorithm to find the shortest routes from A to J and from A to K. You should state the routes and their corresponding lengths.

(7)

Tamasi's brother lives at F. He needs to visit Tamasi at A and then visit their mother who lives at H.

(c) Find a route of minimal length that goes from F to H via A.

(1)

(Total 10 marks)

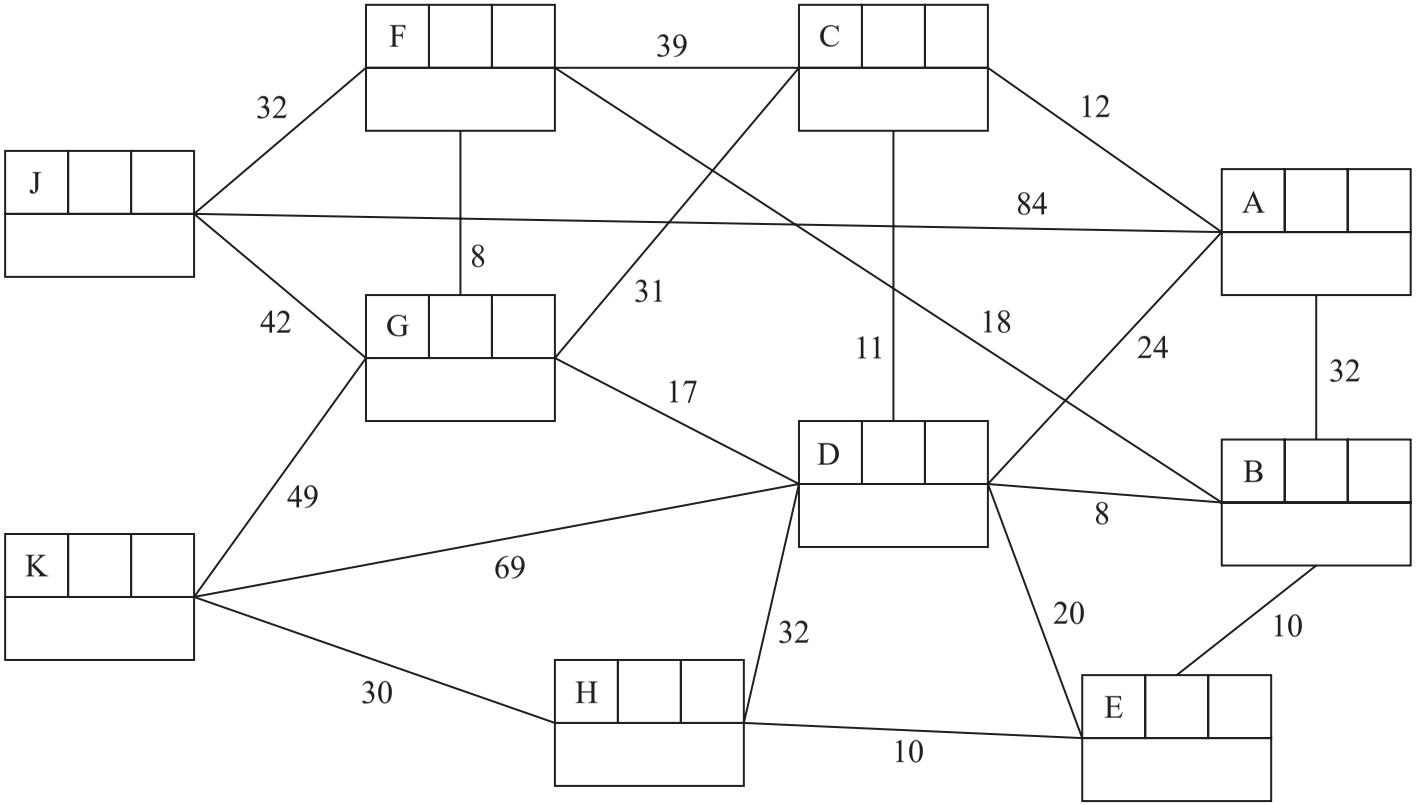
5.

(a) _____

_____

_____

_____



Key:

Vertex	Order of labelling	Final value
Working values		

Leave blank

DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

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Question 5 continued

Q5

(Total 10 marks)