4.

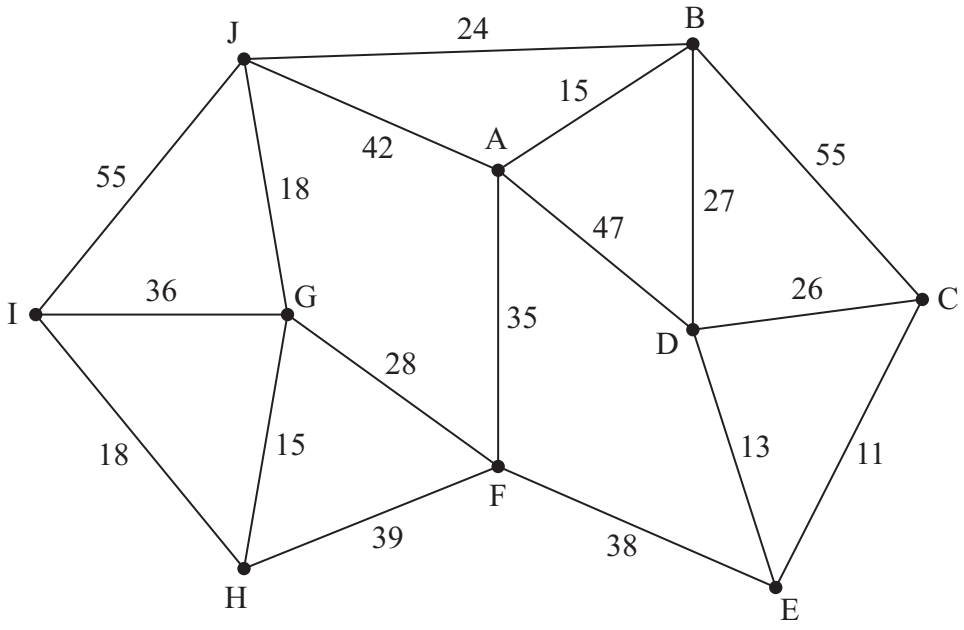


Figure 2

Figure 2 represents the cycle paths between ten towns, A, B, C, D, E, F, G, H, I and J. The number on each arc is the time, in minutes, to cycle between the towns. Munira must cycle from I to C travelling via A.

(a) Explain how Dijkstra's algorithm can be used to find the quickest route from I to C travelling via A.

(2)

(b) (i) Use Dijkstra's algorithm to find the quickest route from I to C via A.

(ii) State the length of this quickest route.

(6)

(Total for Question 4 is 8 marks)