4:

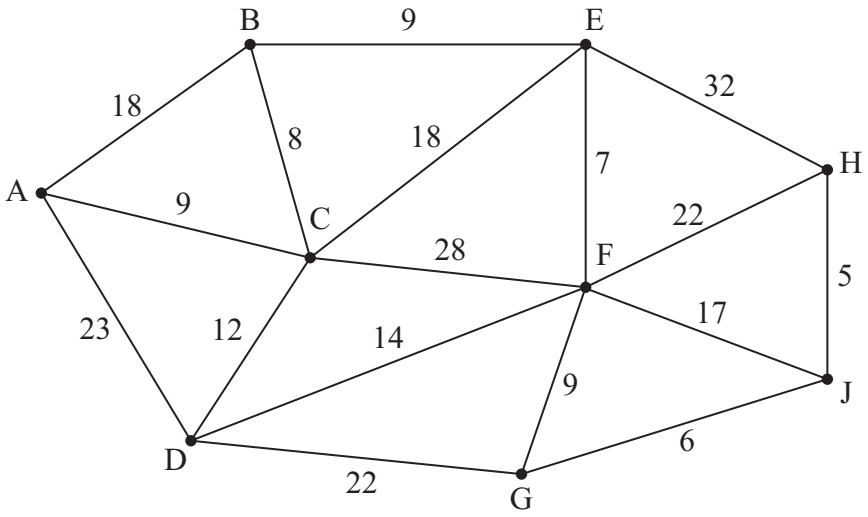


Figure 1

Figure 1 represents a network of roads between nine villages, A, B, C, D, E, F, G, H and J. The number on each arc is the time taken, in minutes, to drive along the corresponding road.

Liliya must drive from village A to village H.

(a) (i) Use Dijkstra's algorithm to determine the fastest route from A to H.

(ii) State the fastest time.

(6)

The roads EF and GJ are now closed for maintenance.

(b) Calculate how much more time Liliya's drive will now take.

(2)

(Total for Question 4 is 8 marks)