Route Inspection Overview (24/11/23)
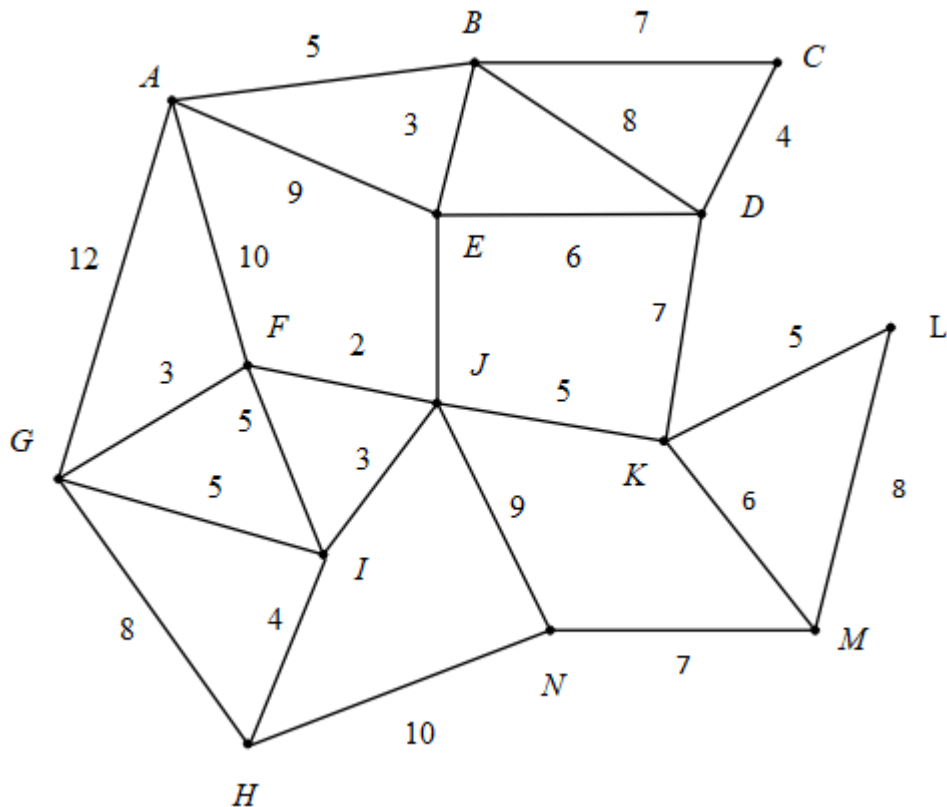
Q1 [Practice/E]

Find the length of the shortest route that covers all the arcs in the network below at least once:

(i) Starting at H and finishing at N.

(ii) Starting at A and finishing at A.

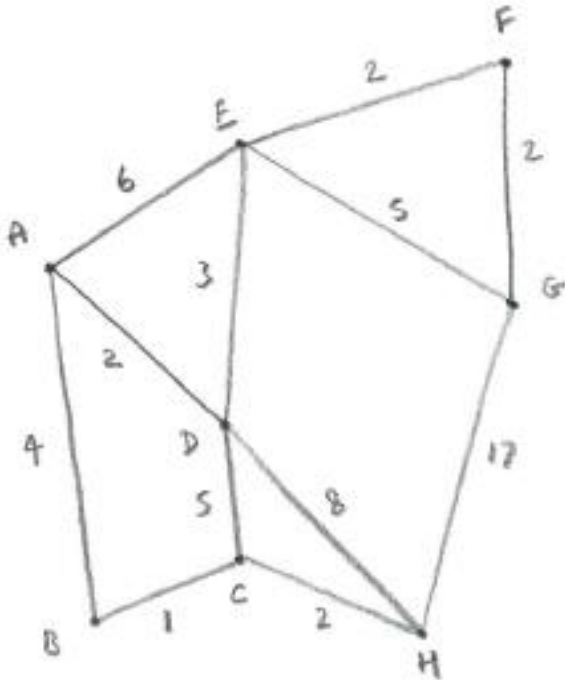(iii) Starting and finishing at any node.

In each case, give an example of a possible route.

(The network has a total weight of 151.)

Q2

Arnold, who is a railway enthusiast, wishes to travel along each stretch of railway linking the cities A-H of a particular country - as shown in the diagram, with the times (in hours) for each stretch. The total time for all the stretches is 57 hours.

(i) Initially he plans to set out from A and return to A. Find a route that covers each stretch of railway at least once, in the shortest possible time, and find the time taken.

(ii) There is a change of plan, and now Arnold wishes to start at A and finish at H (still covering each stretch at least once). Find the new time taken for the quickest route.

(iii) Arnold's wife wants the time reduced. If he has a free choice as to the starting and finishing cities, which should he choose, and what will the new time be?