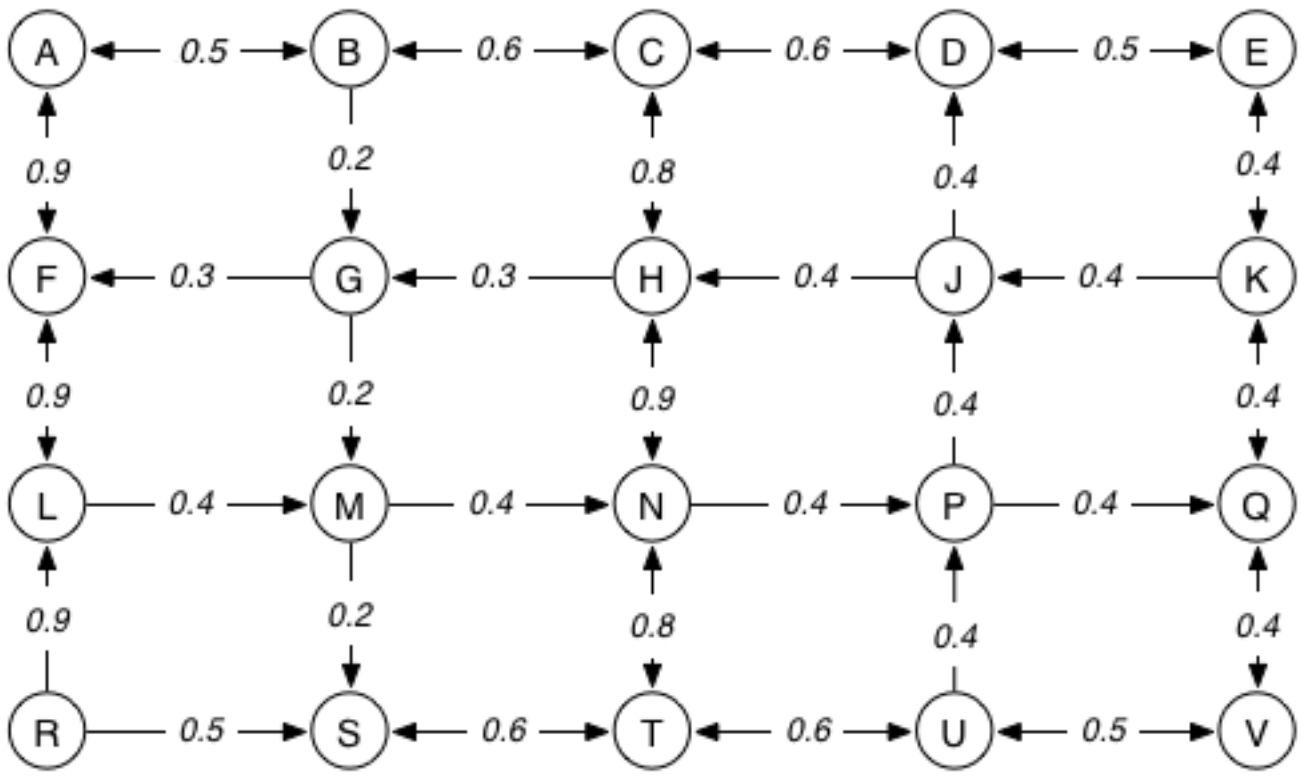
Question 6 (5 marks)

Consider the following weighted, directed graph (loosely based on the streets in Melbourne's CBD):



In this graph, the weight on each edge is proportional to the average time taken to traverse the edge (based on typical traffic loads). An edge with a single arrow corresponds to a one-way street. An edge with an arrow at either end corresponds to a two-way street, and the same weight applies to either direction of traversal (i.e. it takes just as long to drive in either direction).

A. What is the least-cost path to drive from A to V? Show the nodes on the path and give the total weight of the edges along the path. (2 marks)

B. What is the least-cost path to drive back from V to A? Show the nodes on the path and give the total weight of the edges along the path. (2 marks)

C. Is every node reachable from every other node in this graph? If not, which node(s) cannot be reached? (1 mark)

Type the answer to this question into the file called `q6.txt` and submit it using the command:

```
submit q6
```