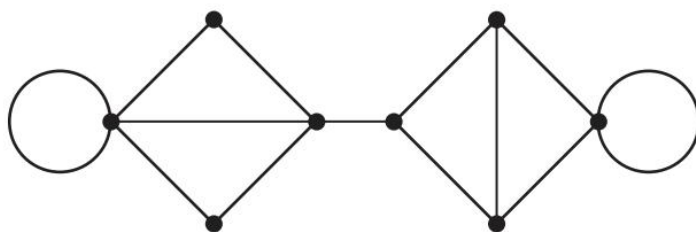


### Question 7

(6 marks)

- (a) The graph below shows the paths connecting the exhibits at a zoo.



- (i) Explain why the graph is not semi-Eulerian. (1 mark)
- (ii) Draw one edge on the graph so that it becomes semi-Eulerian and does not contain a bridge. (2 marks)
- (b) The adjacency matrix  $Q$  represents the raised paths connecting the observation platforms in the safari section at the zoo. Draw a planar graph for the adjacency matrix. (3 marks)

$$Q = \begin{matrix} & \begin{matrix} A & B & C & D \end{matrix} \\ \begin{matrix} A \\ B \\ C \\ D \end{matrix} & \begin{bmatrix} 0 & 2 & 1 & 1 \\ 2 & 0 & 1 & 1 \\ 1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 1 \end{bmatrix} \end{matrix}$$

A



B



C



D

