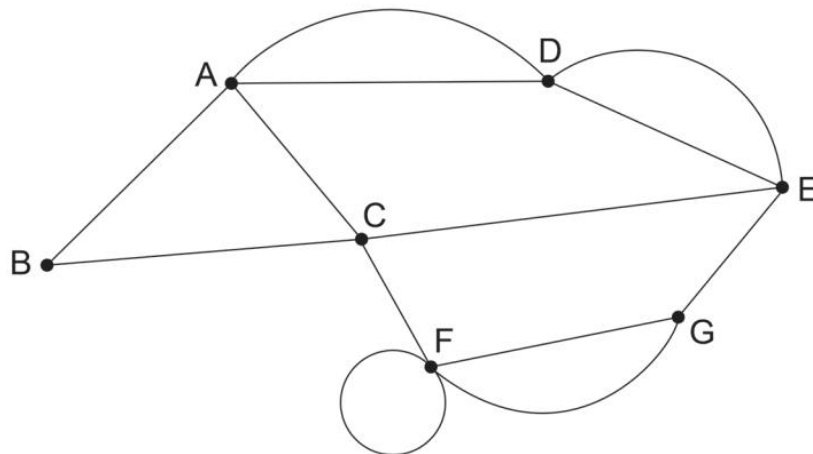**Question 2** (9 marks)

The network shown below is for walking tracks around a wildlife sanctuary. Located at each vertex is an undercover area with picnic tables and viewing stations for visitors.

(a) Complete the adjacency matrix for the network shown. (3 marks)

	A	B	C	D	E	F	G
A	0	1	1	2	0	0	0
B	1	0	1	0	0	0	0
C	1	1	0	__	__	__	__
D	2	0	0	__	__	__	__
E	0	0	1	__	__	__	__
F	0	0	1	__	__	__	__
G	0	0	0	__	__	__	__

(b) Identify the feature of the adjacency matrix that indicates it is an undirected graph. (1 mark)

(d)   Each morning before visitors are admitted, all fences along walking tracks between vertices must be checked for safety. Is it possible to carry out the safety check with an Eulerian trail, a semi-Eulerian trail or neither? Justify your answer.   (2 marks)