

**ADVANCED SUBSIDIARY GCE UNIT
MATHEMATICS**

4736/01

Decision Mathematics 1 INSERT for Questions 5 and 6
THURSDAY 14 JUNE 2007

Afternoon
Time: 1 hour 30 minutes

Candidate
Name

Centre
Number

| | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|

Candidate
Number

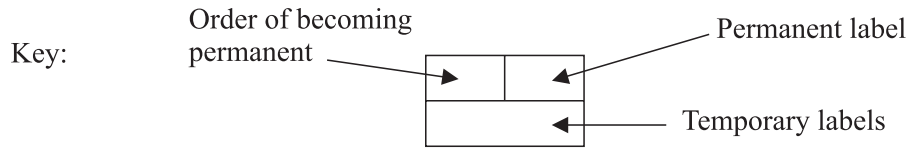
| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

INSTRUCTIONS TO CANDIDATES

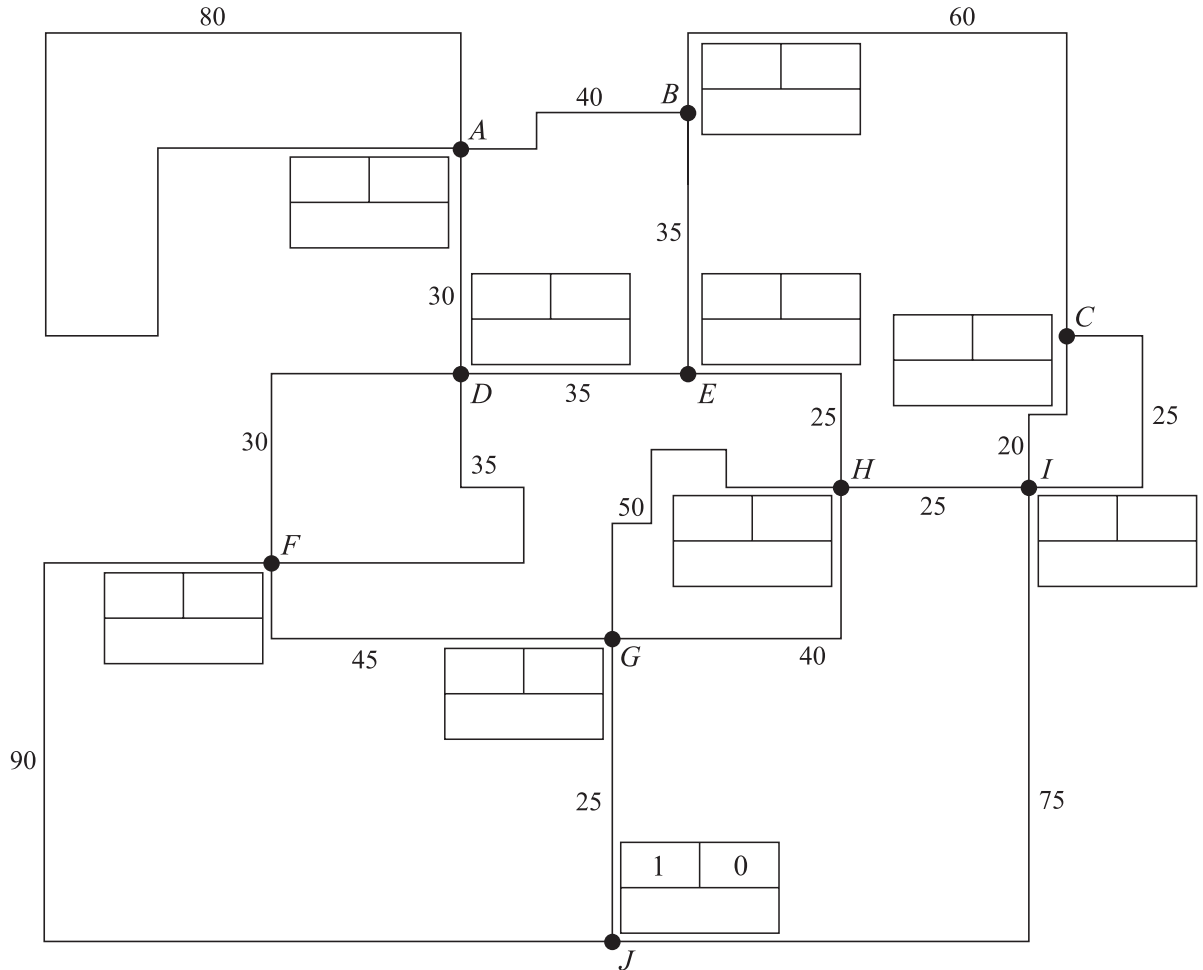
- Write your name, centre number and candidate number in the boxes above.
- This insert should be used to answer Questions **5** and **6**.
- Write your answers to Questions **5** and **6** in the spaces provided in this insert, and attach it to your answer booklet.

This document consists of **4** printed pages.

5 (i)



Do not cross out your working values (temporary labels)



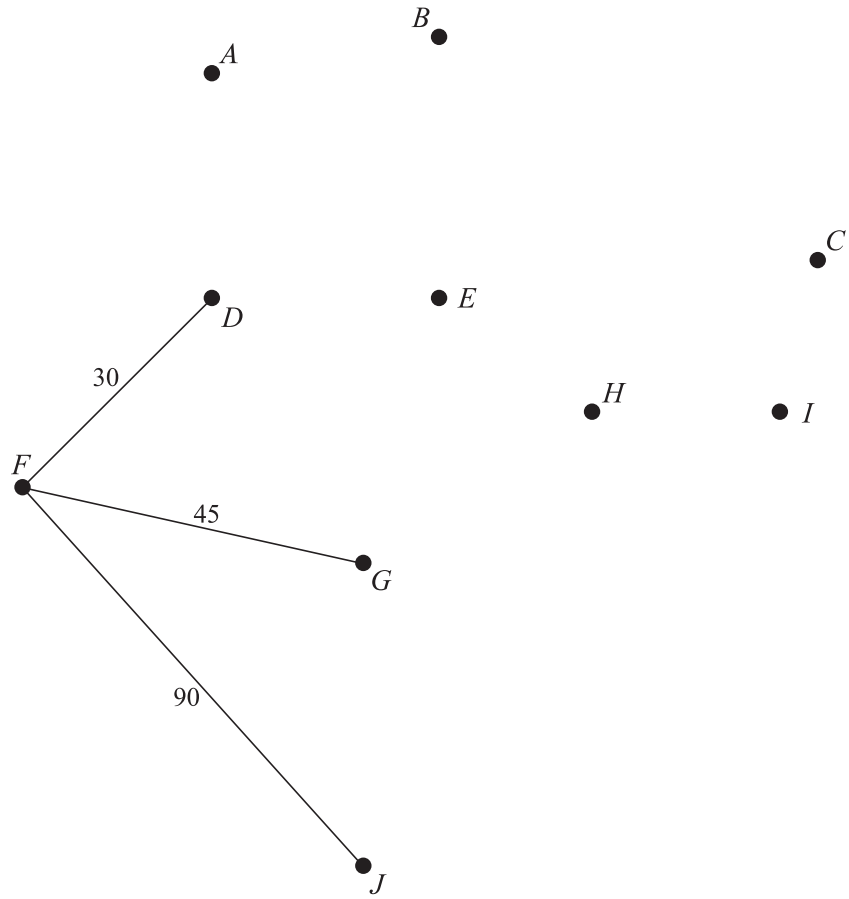
Shortest path from *J* to *B*:

Length of path: metres

(ii)

Length of shortest route that starts and ends at *J* and covers every arc = metres

(iii)



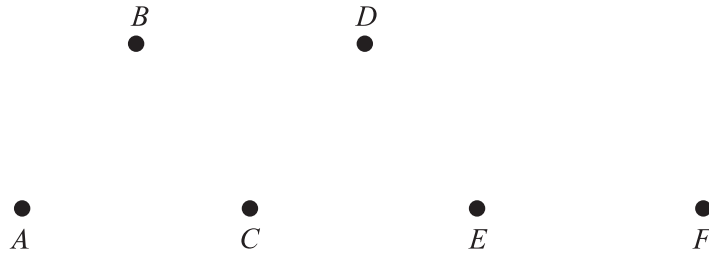
6 (i)

↓

| | <i>A</i> | <i>B</i> | <i>C</i> | <i>D</i> | <i>E</i> | <i>F</i> |
|----------|----------|----------|----------|----------|----------|----------|
| <i>A</i> | – | 6 | 3 | – | – | – |
| <i>B</i> | 6 | – | 5 | 6 | – | 14 |
| <i>C</i> | 3 | 5 | – | 8 | 4 | 10 |
| <i>D</i> | – | 6 | 8 | – | 3 | 8 |
| <i>E</i> | – | – | 4 | 3 | – | – |
| <i>F</i> | – | 14 | 10 | 8 | – | – |

Order in which rows were deleted: *A*.....

Minimum spanning tree:



Total weight: miles

(ii)

Lower bound: miles

(iii) Cycle:

Upper bound: miles