

Thursday 6 June 2013 – Morning

AS GCE MATHEMATICS (MEI)

4771/01 Decision Mathematics 1

PRINTED ANSWER BOOK

Candidates answer on this Printed Answer Book.

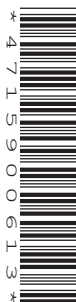
OCR supplied materials:

- Question Paper 4771/01 (inserted)
- MEI Examination Formulae and Tables (MF2)

Other materials required:

- Scientific or graphical calculator

Duration: 1 hour 30 minutes



Candidate forename		Candidate surname	
Centre number		Candidate number	

INSTRUCTIONS TO CANDIDATES

These instructions are the same on the Printed Answer Book and the Question Paper.

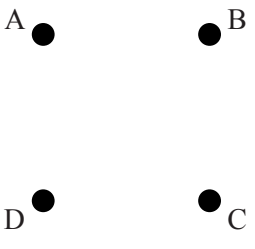
- The Question Paper will be found in the centre of the Printed Answer Book.
- Write your name, centre number and candidate number in the spaces provided on the Printed Answer Book. Please write clearly and in capital letters.
- **Write your answer to each question in the space provided in the Printed Answer Book.** Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- You are permitted to use a graphical calculator in this paper.
- Final answers should be given to a degree of accuracy appropriate to the context.

INFORMATION FOR CANDIDATES

This information is the same on the Printed Answer Book and the Question Paper.

- The number of marks is given in brackets [] at the end of each question or part question on the Question Paper.
- You are advised that an answer may receive **no marks** unless you show sufficient detail of the working to indicate that a correct method is being used.
- The total number of marks for this paper is **72**.
- The Printed Answer Book consists of **12** pages. The Question Paper consists of **8** pages. Any blank pages are indicated.

Section A (24 marks)

1 (i)	
1 (ii)	
1 (iii)	

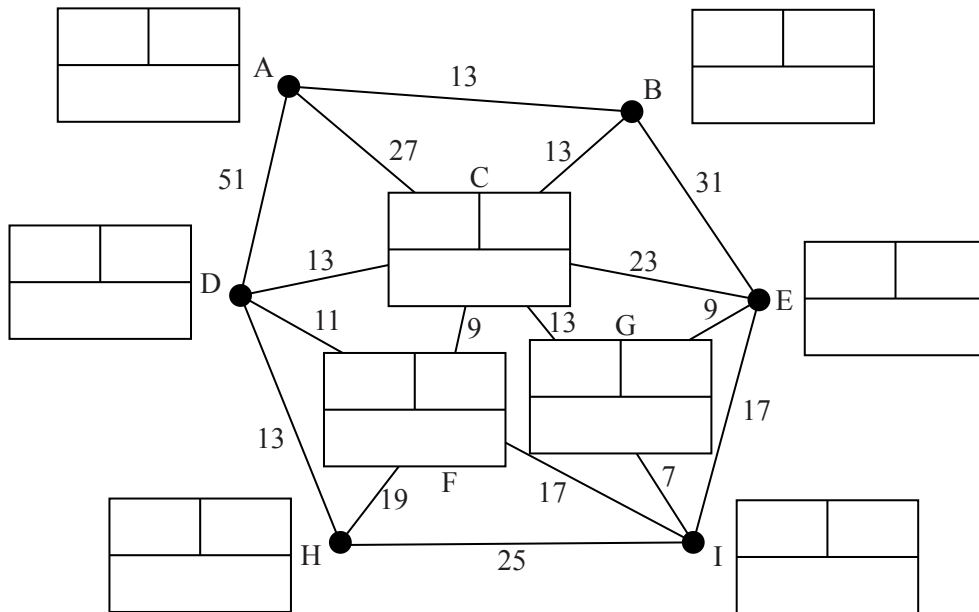
2(i)*i*th pass

<i>i</i> =1	9	7	3	11	5	13
<i>i</i> =2						
<i>i</i> =3						
<i>i</i> =4						
<i>i</i> =5						

comparisons	swaps
5	3

2(ii)**2(iii)**

3(i)



From A to	Shortest route	Distance (miles)
B		
C		
D		
E		
F		
G		
H		
I		

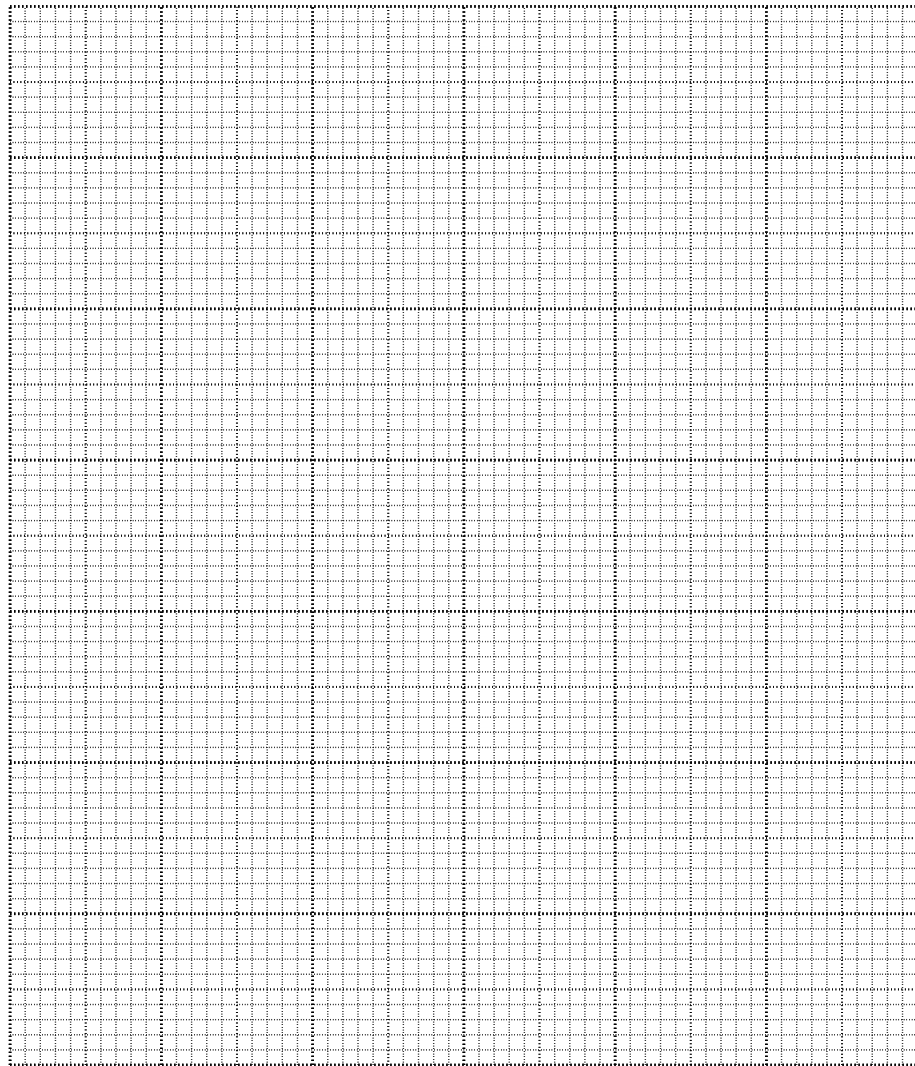
There is a spare copy of the network and table on page 10.

3(ii)

Section B (48 marks)

4(i) & (ii)	
4(iii)	
4(iv)	There is a spare copy of this grid on page 11.

5(i)



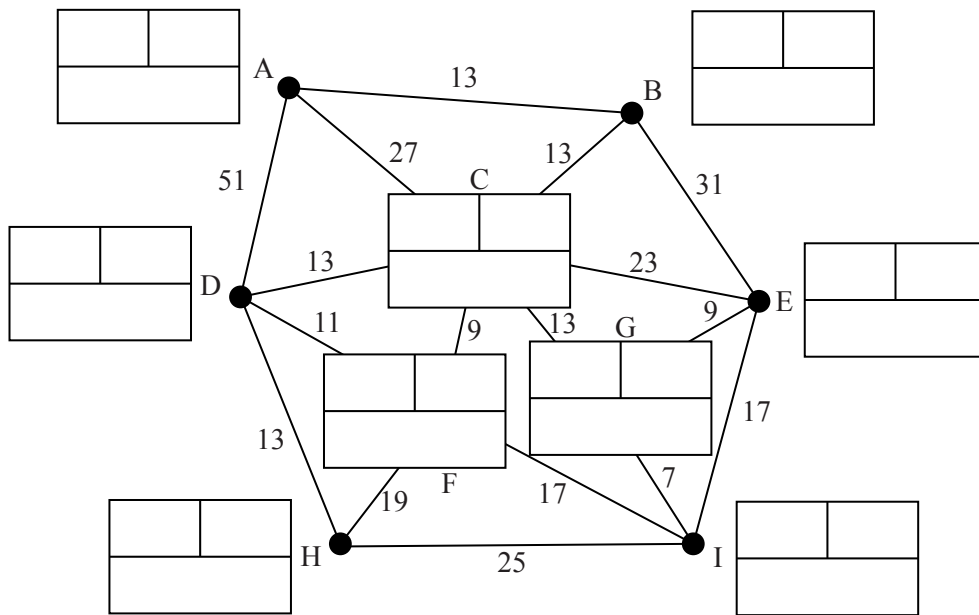
There is a spare copy of this graph paper on page 12.

5(ii)	
5(iii)	
5(iv)	

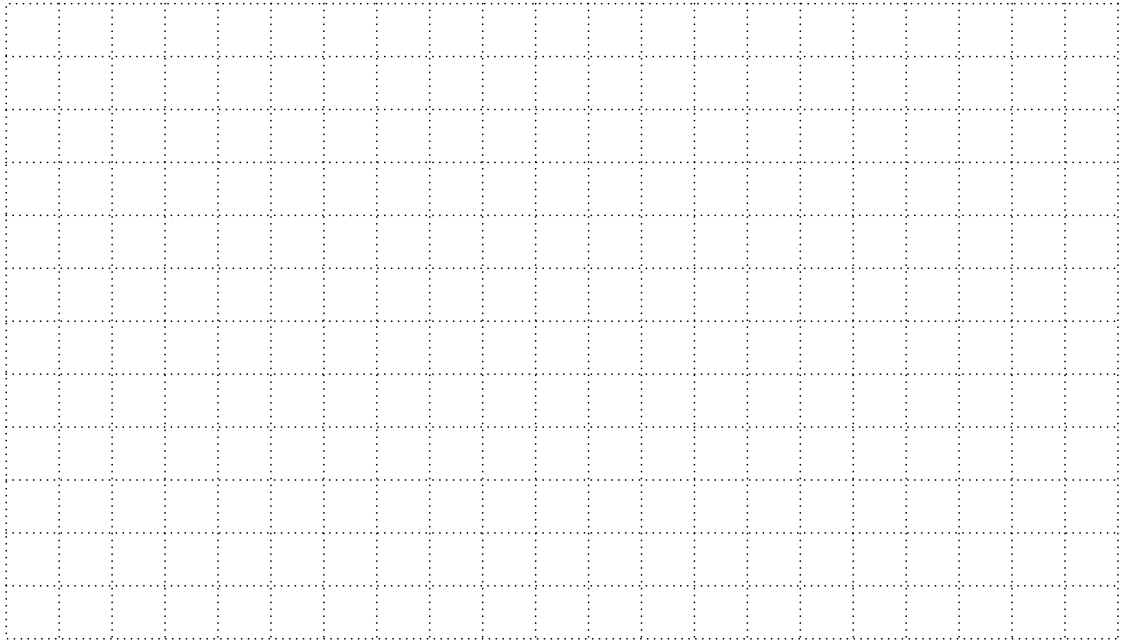
6(i)											
6(ii)	customer number	1	2	3	4	5	6	7	8	9	10
	random number		5	3	2	4	7	9	1	1	8
	time interval (mins)										
	arrival time	0									
6(iii)											
6(iv)	Random numbers: 23 15 98 01 32 45 47 86 71 17 83 31 45 37 05 21 90 06 54 22										
	customer number	1	2	3	4	5	6	7	8	9	10
	processing time										
6(v)											
6(vi)	customer number	1	2	3	4	5	6	7	8	9	10
	random number	8	3	0	1	4	0	2	5	7	6
	payment time										

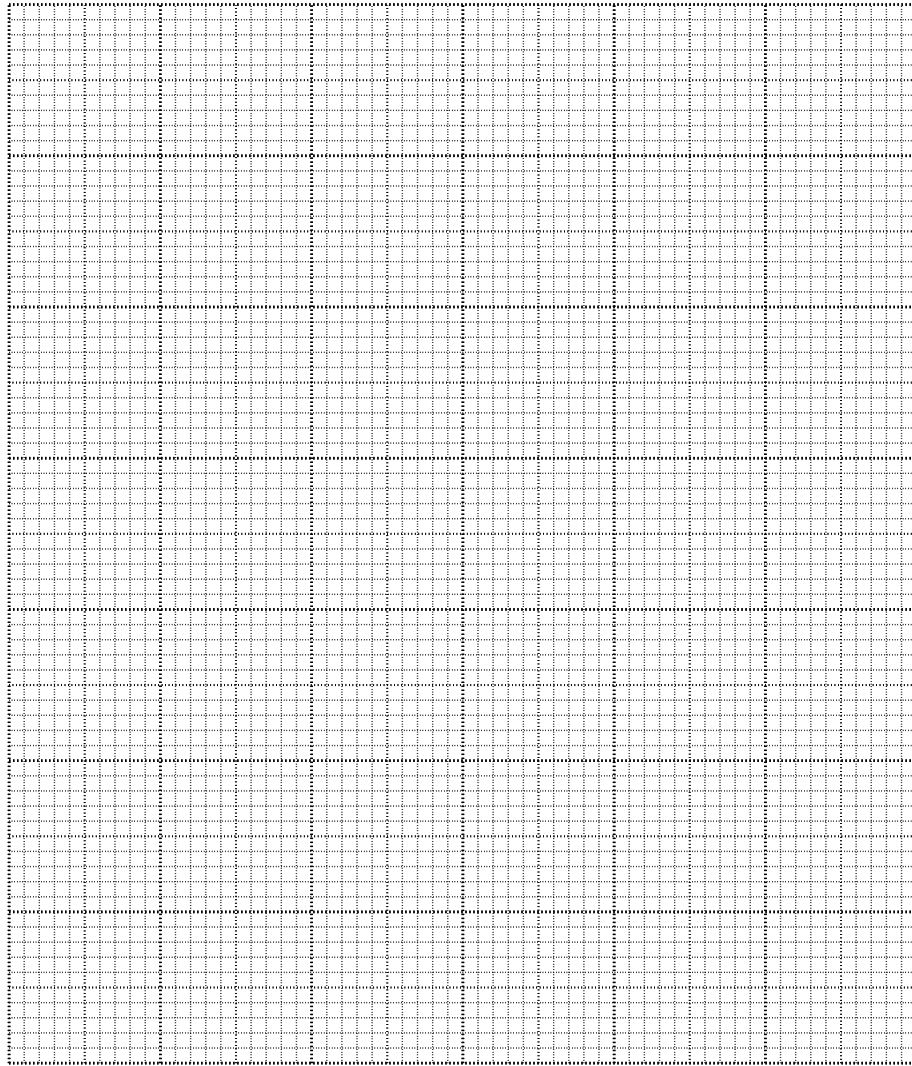
6(vii)	customer number	1	2	3	4	5	6	7	8	9	10
	arrival										
	departure										
6(viii)	customer number	1	2	3	4	5	6	7	8	9	10
	arrival										
	departure										

3(i) Spare copy of network and table for 3(i).



From A to	Shortest route	Distance (miles)
B		
C		
D		
E		
F		
G		
H		
I		

4(iv)**Spare copy of grid for 4(iv).****PLEASE DO NOT WRITE IN THIS SPACE**

5(i) Spare copy of graph paper for 5(i).**Copyright Information**

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