



Oxford Cambridge and RSA

**Wednesday 15 June 2016 – 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 inside 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 scientific or graphical calculator in this paper.
- Final answers should be given to a degree of accuracy appropriate to the context.

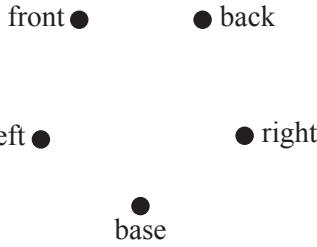
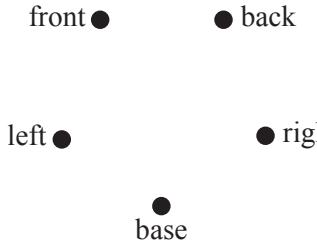
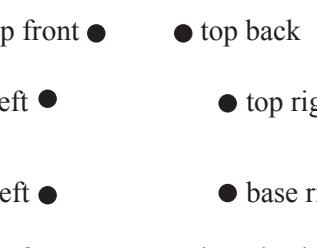
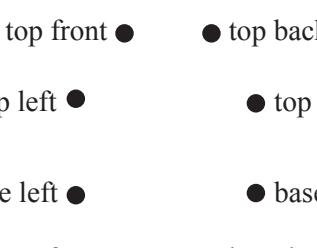
**INFORMATION FOR CANDIDATES**

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 **16** pages. The Question Paper consists of **8** pages. Any blank pages are indicated.

1 (i)	
1 (ii)	
1 (iii)	<b>Random digits</b> 1 6 4 8 6 4 8 7 4 3 1 1 5 3 2
1 (iv)	

2 (i)	
2 (ii)	
2 (iii)	
2 (iv)	

3 (i)	<p>Adjacency graph</p>  <p>front ●      ● back</p> <p>left ●      ● right</p> <p>base</p>	<p>Complement</p>  <p>front ●      ● back</p> <p>left ●      ● right</p> <p>base</p>
3 (ii)(A)	<p>Adjacency graph</p>  <p>top front ●      ● top back</p> <p>top left ●      ● top right</p> <p>base left ●      ● base right</p> <p>base front ●      ● base back</p>	<p>Complement</p>  <p>top front ●      ● top back</p> <p>top left ●      ● top right</p> <p>base left ●      ● base right</p> <p>base front ●      ● base back</p>
3 (ii)(B)		

**Spare templates for 3(i) and 3(ii) (A)**

## Adjacency graph

front ●      ● back

left ●

● right

base

## Complement

front ●      ● back

left ●

● right

base

## Adjacency graph

top front ●      ● top back

top left ●

● top right

base left ●

● base right

base front ●

● base back

## Complement

top front ●      ● top back

top left ●

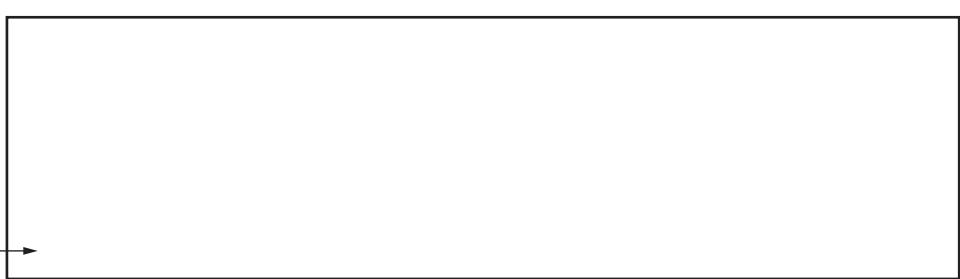
● top right

base left ●

● base right

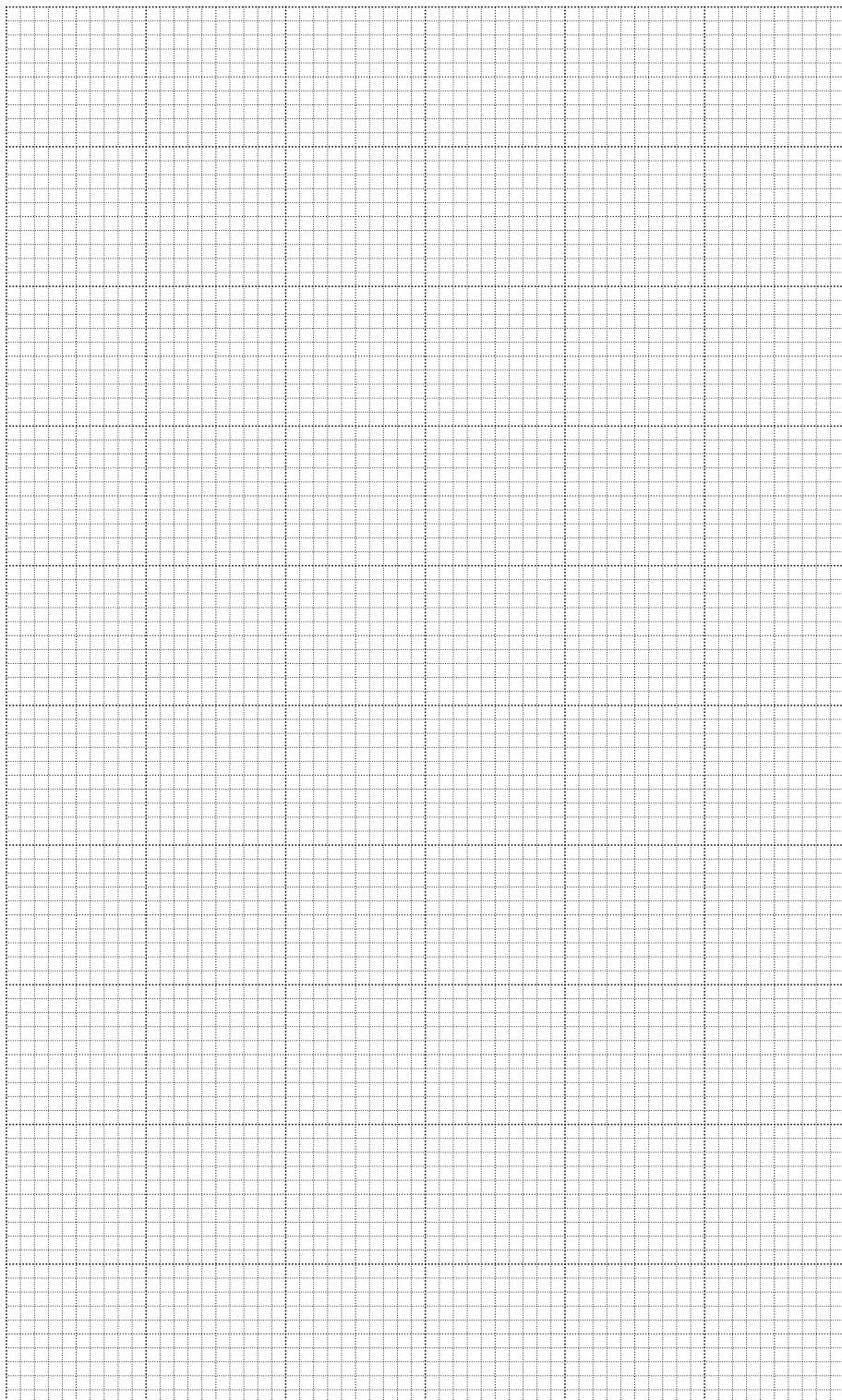
base front ●

● base back

4 (i)	
4 (ii)	
4 (iii)	
4 (iv)	
4 (v)	
4 (vi)	(answer space continued on next page)

4 (vi)

(continued) A spare copy of this graph can be found on page 12.



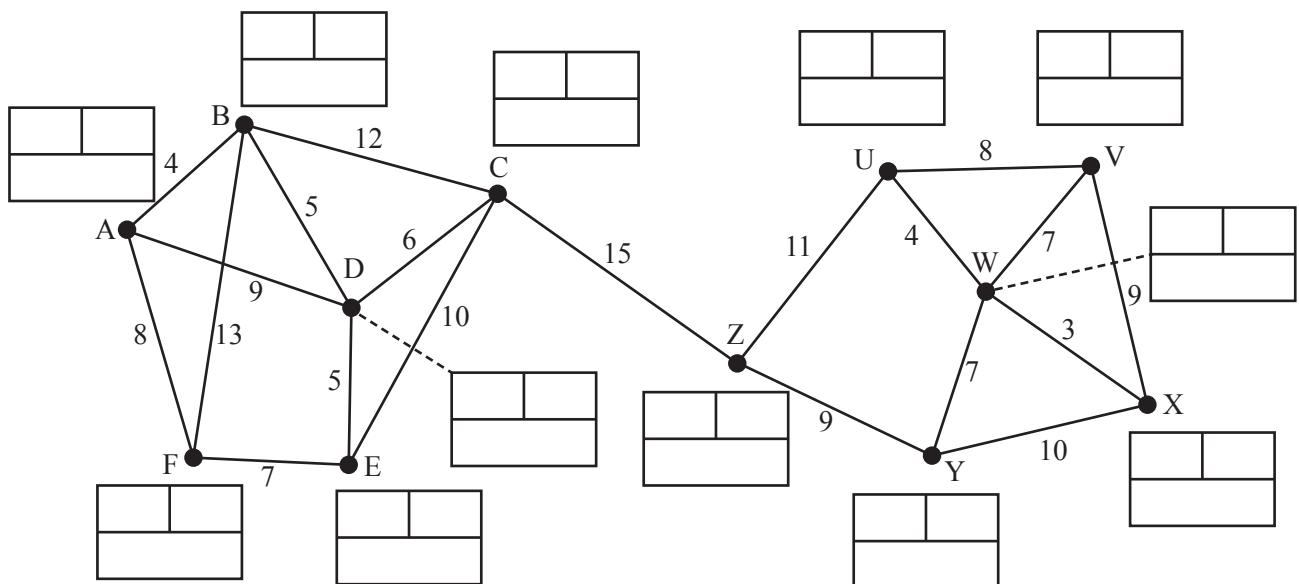
5 (i)	Activity	Duration (weeks)	Immediate predecessors
A	1		
B	1		
C	1		
D	8		
E	6		
F	6		
G	6		
H	1		
I	2		
J	4		
K	2		

5 (ii) & (iii)	
----------------	--

<b>5 (iv)</b>	Week	1	2	3	4	5	6	7	8	9	10	11	12
	Room 1												
	Room 2												
	Room 3												
<b>Spare for 5 (iv)</b>													
	Week	1	2	3	4	5	6	7	8	9	10	11	12
	Room 1												
	Room 2												
	Room 3												
<b>Spare space for 5 (ii) &amp; (iii)</b>													

6(a)(i)

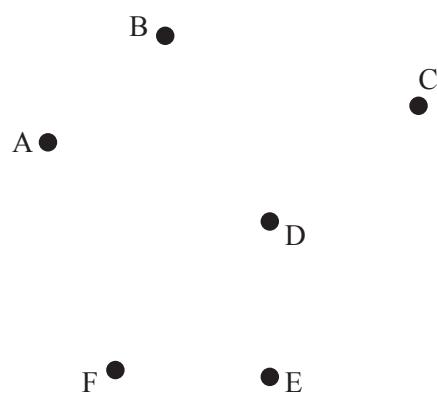


Route ...

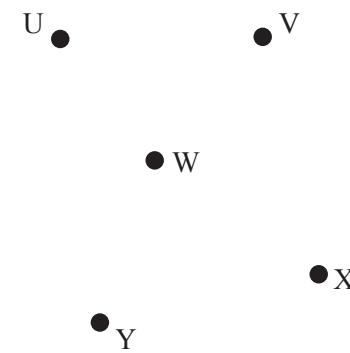
Distance ...

6(a)(ii)

6(b)(i)

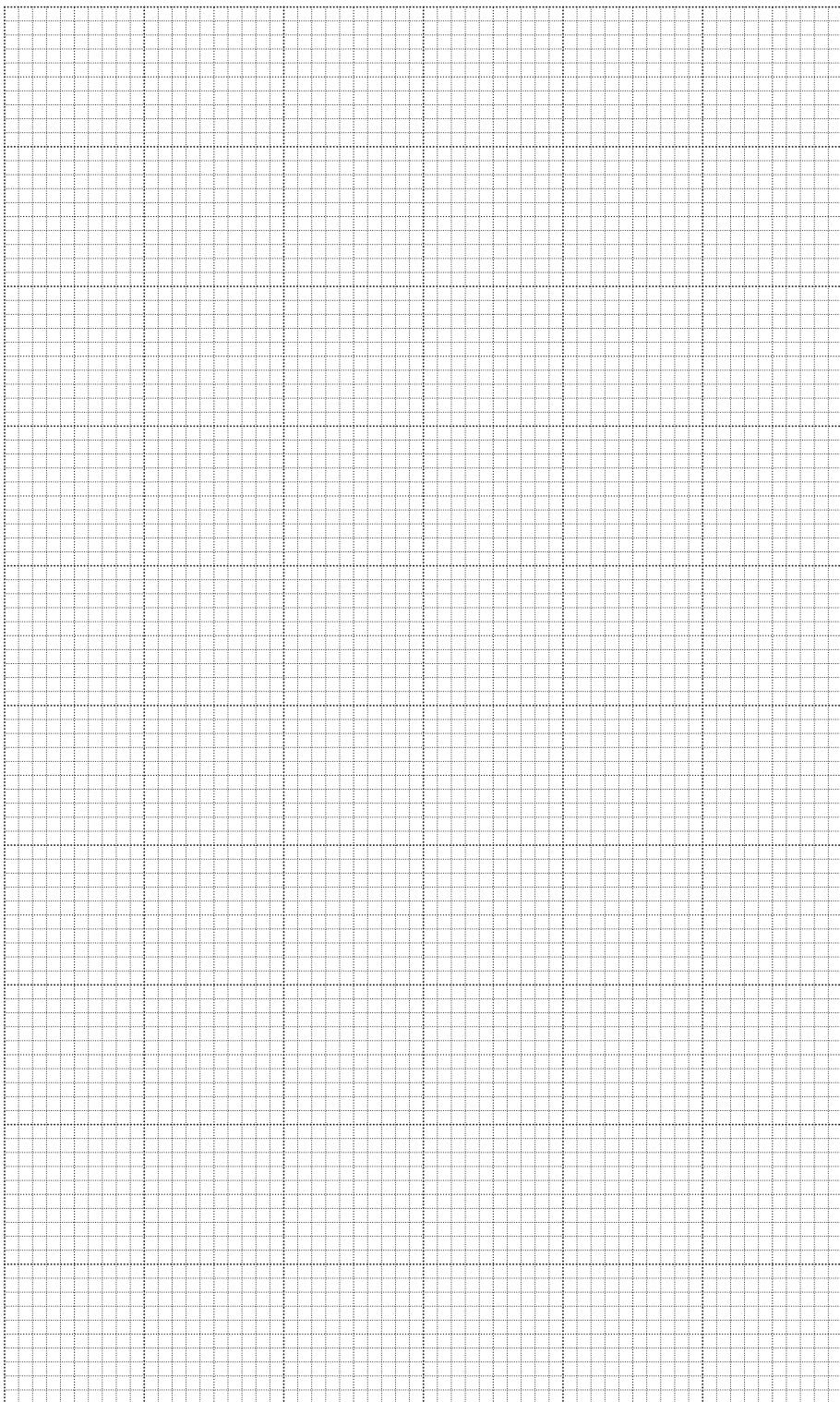


6(b)(ii)



6(b)(iii)

4 (vi) Spare copy of graph for question 4(vi).



**BLANK PAGE**

**PLEASE DO NOT WRITE ON THIS PAGE**

**BLANK PAGE**

**PLEASE DO NOT WRITE ON THIS PAGE**

**BLANK PAGE**

**PLEASE DO NOT WRITE ON THIS PAGE**

**PLEASE DO NOT WRITE ON THIS PAGE**



Oxford Cambridge and RSA

**Copyright Information**

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website ([www.ocr.org.uk](http://www.ocr.org.uk)) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact the Copyright Team, First Floor, 9 Hills Road, Cambridge CB2 1GE.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.