

OCR

Oxford Cambridge and RSA

Friday 24 May 2024 – Afternoon

AS Level Further Mathematics B (MEI)

Y413/01 Modelling with Algorithms

Printed Answer Booklet

Time allowed: 1 hour 15 minutes

AB

You must have:

- Question Paper Y413/01 (inside this document)
- the Formulae Booklet for Further Mathematics B (MEI)
- a scientific or graphical calculator



Please write clearly in black ink. **Do not write in the barcodes.**

Centre number

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Candidate number

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First name(s)

Last name

INSTRUCTIONS

- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided in the **Printed Answer Booklet**. If you need extra space use the lined page at the end of the Printed Answer Booklet. The question numbers must be clearly shown.
- Answer **all** the questions.
- Where appropriate, your answer should be supported with working. Marks might be given for using a correct method, even if your answer is wrong.
- Give your final answers to a degree of accuracy that is appropriate to the context.

INFORMATION

- This document has **12** pages.

ADVICE

- Read each question carefully before you start your answer.

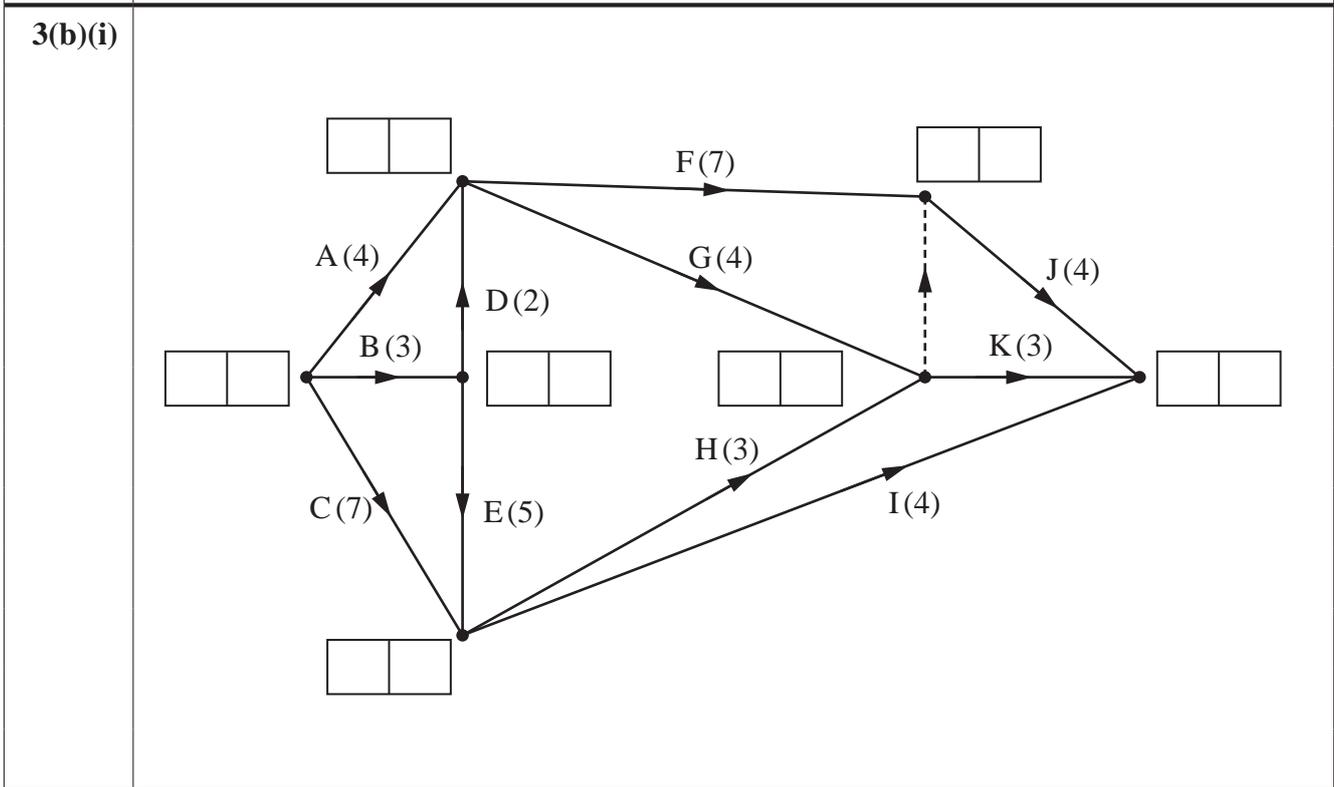
1(a)(i)	
1(a)(ii)	
1(b)	$\begin{array}{ccccc} & A & B & C & D & E \\ \begin{array}{c} A \\ B \\ C \\ D \\ E \end{array} & \left(& & & & \right) \end{array}$
1(c)	
1(d)	

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3

2(a)	31	13	12	17	25	18	11	8	15
2(b)	31	13	12	17	25	18	11	8	15
2(c)									
2(d)									

3(a)	Activity	Immediate Predecessor(s)
	A	
	B	
	C	
	D	
	E	
	F	
	G	
	H	
	I	
	J	
	K	



3(b)(ii)

3(b)(iii)

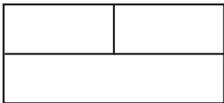
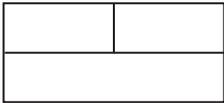
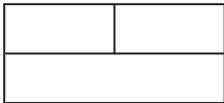
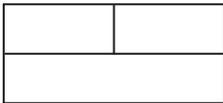
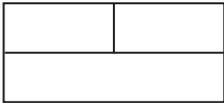
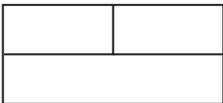
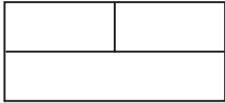
3(c)

3(d)

	0	1	2	3	4	5	6	7	8	9	10	11
Worker 1												
Worker 2												
Worker 3												

	11	12	13	14	15	16	17	18	19	20	21	22
Worker 1												
Worker 2												
Worker 3												

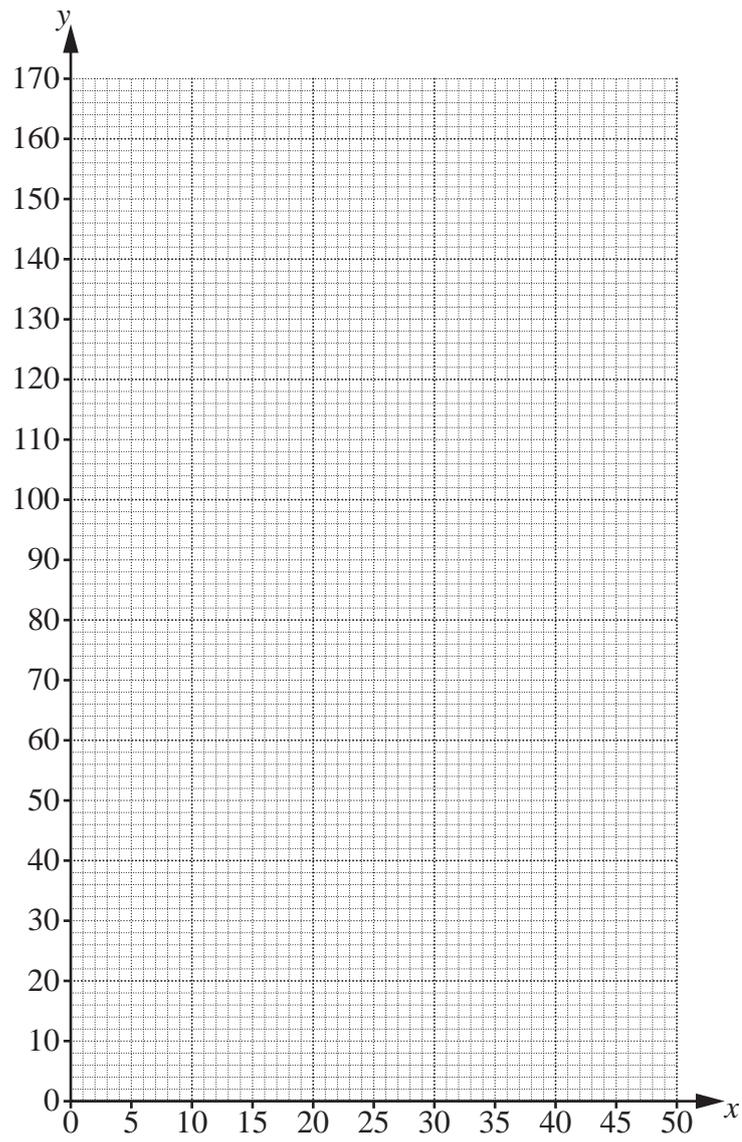
DO NOT WRITE IN THIS SPACE

5(a)	
5(b)	
5(c) 5(d)(i)	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>A •</p> </div> <div style="text-align: center;">  <p>B •</p> </div> <div style="text-align: center;">  <p>C •</p> </div> <div style="text-align: center;">  <p>D •</p> </div> <div style="text-align: center;">  <p>E •</p> </div> <div style="text-align: center;">  <p>F •</p> </div> <div style="text-align: center;">  <p>G •</p> </div> </div> <p>Key:</p> <div style="display: flex; align-items: center; margin-left: 20px;"> <div style="margin-right: 10px;">Order of labelling</div> <div style="border: 1px solid black; padding: 5px; display: flex; align-items: center; gap: 10px;"> <div style="border-right: 1px solid black; width: 40px; height: 20px; position: relative;"> → </div> <div style="width: 40px; height: 20px; position: relative;"> ← </div> </div> <div style="margin-left: 10px;">Label</div> </div> <div style="display: flex; align-items: center; margin-left: 20px;"> <div style="margin-right: 10px;">Working values (do not cross out)</div> <div style="border: 1px solid black; padding: 5px; display: flex; align-items: center; gap: 10px;"> <div style="width: 40px; height: 20px; position: relative;"> → </div> </div> </div> <p>Weight of shortest path from A to G:</p>
5(d)(ii)	

5(e)	
5(f)(i)	
5(f)(ii)	

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6(a) (continued)



6(b)

6(c)

