

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

You must have:

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





Please write clea	arly in	black	c ink.	Do no	ot writ	te in the barcodes.		
Centre number						Candidate number		
First name(s)								
Last name								

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INSTRUCTIONS

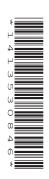
- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided in the Printed Answer Booklet. If you need extra space use the lined page at the end of the Printed Answer Booklet. The question numbers must be clearly shown.
- Answer 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.

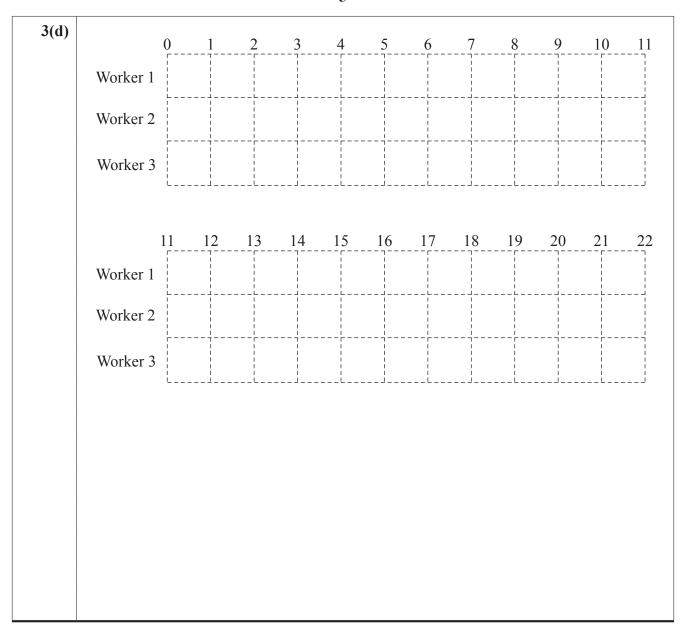


1(a)(i)	
1(a)(ii)	
1(b)	
	A B C D E
	A (
	В
	C
	D
	E
1(c)	
1(d)	

DO NOT WRITE IN THIS SPACE

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)									
_(a)									

3(a)	Activity	Immediate Predecessor(s)	
	A		
	В		
	С		
	D		
	E		
	F		
	G		
	Н		
	Ι		
	J		
	K		
3(b)(i)			
		F(7)	
	A(4) D(2)	G(4)	J(4)
	B(3)	K	(3)
		H(3)	
	C(7) $E(5)$	I(4)	
3(b)(ii)			
3(b)(ll)			
3(b)(iii)			
S(n)(III)			
2()			
3(c)			



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4(a)								
100								
4(b)								
	P	x	у	Z	<i>s</i> ₁	<i>s</i> ₂	<i>s</i> ₃	RHS
	1	-2	3	-1	0	0	0	0
	0	1	2	3	1	0	0	k
	0	3	-1	1	0	1	0	45
	0	2	4	-1	0	0	1	50
		T	I					
	P	X	У	Z	<i>s</i> ₁	<i>s</i> ₂	<i>s</i> ₃	RHS
4(c)								

4(d)	

5(a)	
5(b)	
3(0)	
5(c)	
5(d)(i)	B E
	•
	D D
	A G
	· F
	C
	Key:
	Order of labelling Label
	Working values (do not cross out)
	Weight of shortest path from A to G:
5(d)(ii)	

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

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6(a)	(continued)	y ,	
		170-	
		160	
		150-	
		140-	
		130-	
		120-	
		110-	
		100-	
		90-	
		80-	
		70-	
		60	
		50-	
		40	
		30-	
		20	
		10-	
		0 5 10 15 20 25 30 35 40 45 50	x
		0 3 10 13 20 23 30 33 40 43 30	
6(b)			
6(c)			

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EXTRA ANSWER SPACE

If you need extra space use this lined page. You must write the question numbers clearly in the margin.



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