OCR
Oxford Cambridge and RSA

Wednesday 19 June 2024 – Afternoon

A Level Further Mathematics A

Y544/01 Discrete Mathematics

Printed Answer Booklet

Time allowed: 1 hour 30 minutes

AB

You must have:
- Question Paper Y544/01 (inside this document)
- the Formulae Booklet for A Level Further Mathematics A
- a scientific or graphical calculator

* Y 5 4 4 0 1 *

* 1 4 2 2 4 7 8 1 1 2 *

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

Centre number | | | | | | Candidate number | | | | |

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 pages 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 non-exact numerical answers correct to **3** significant figures unless a different degree of accuracy is specified in the question.
- The acceleration due to gravity is denoted by $g\,\mathrm{m\,s^{-2}}$. When a numerical value is needed use $g = 9.8$ unless a different value is specified in the question.

INFORMATION
- The total mark for this paper is **75**.
- The marks for each question are shown in brackets **[ ]**.
- This document has **16** pages.

ADVICE
- Read each question carefully before you start your answer.

BLANK PAGE

PLEASE DO NOT WRITE ON THIS PAGE

1(a)

A chooses	B								
B chooses	A								
C chooses	D								
D chooses	C								

1(b)

1(c)

1(d)

1(e)

2(a)

P	x	y	z	s	t	u	RHS
1							
0	3	–4	–1	1	0		
0	1	–1	0	0	1		

2(b)

P	x	y	z	s	t	u	RHS

2(c) $x =$ $y =$ $z =$

2(d) Move along edge $= 0,$ $= 0$

From $x =$, $y =$, $z =$, $s =$, $t =$, $u =$

to $x =$, $y =$, $z =$, $s =$, $t =$, $u =$

3(a)

		Beth		
		X	Y	Z
Amir	P	2	−3	c
	Q	−3	b	4
	R	a	−1	−2

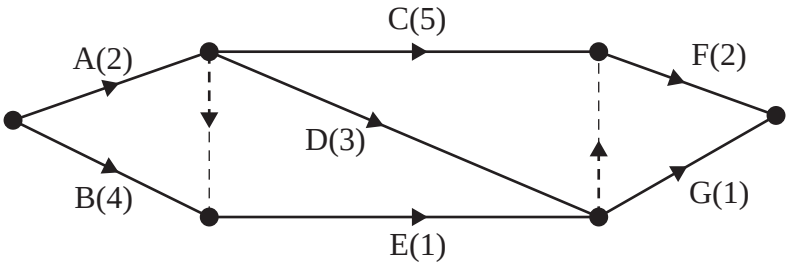
3(b)

		Beth		
		X	Y	Z
Amir	P	2	−3	c
	Q	−3	b	4
	R	a	−1	−2

3(c)

4(a)

4(b)



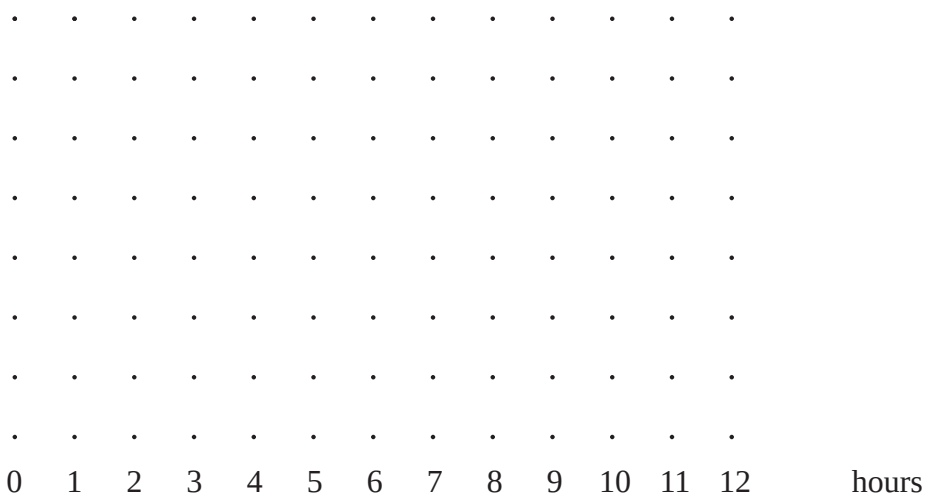
Minimum project completion time = hours

Activity	A	B	C	D	E	F	G
Float (hours)							

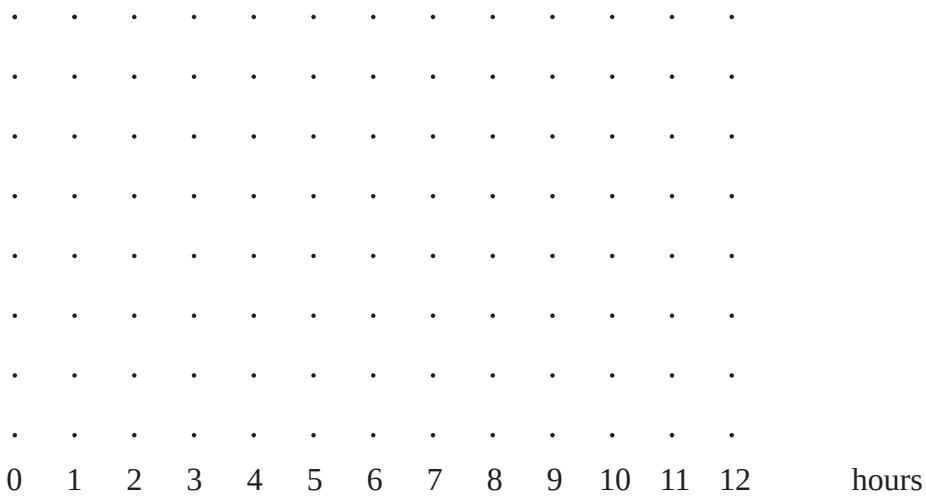
4(c)

Activity							
Independent float (hours)							
Interfering float (hours)							

4(d)



Spare copy of grid



4(e)

Time from to (hours)	0 1	1 2	2 3	3 4	4 5	5 6	6 7	7 8	8 9	9 10	10 11	11 12		
Worker 1														
Worker 2														

4(f)

Time from to (hours)	0 1	1 2	2 3	3 4	4 5	5 6	6 7	7 8	8 9	9 10	10 11	11 12		
Worker 1														
Worker 2														

5(a)

5(b)

5(c)

B • • C

A • • D

F • • E

5(d)

5(e)

5(f)

Space for working

5(g)

	A	B	C	D	E	F
A						
B						
C						
D						
E						
F						

5(h)

6(a)

6(b) Space for working

6(c)

6(d)

Least possible value of Sasha's maximum total profit is

6(e)

EXTRA ANSWER SPACE

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