



Oxford Cambridge and RSA

Thursday 26 May 2022 – Afternoon

AS Level Further Mathematics A

Y534/01 Discrete Mathematics

Printed Answer Booklet

Time allowed: 1 hour 15 minutes



You must have:

- Question Paper Y534/01 (inside this document)
- the Formulae Booklet for AS Level Further Mathematics A
- 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 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 $g \text{ m s}^{-2}$. 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 **60**.
- The marks for each question are shown in brackets [].
- This document has **12** pages.

ADVICE

- Read each question carefully before you start your answer.

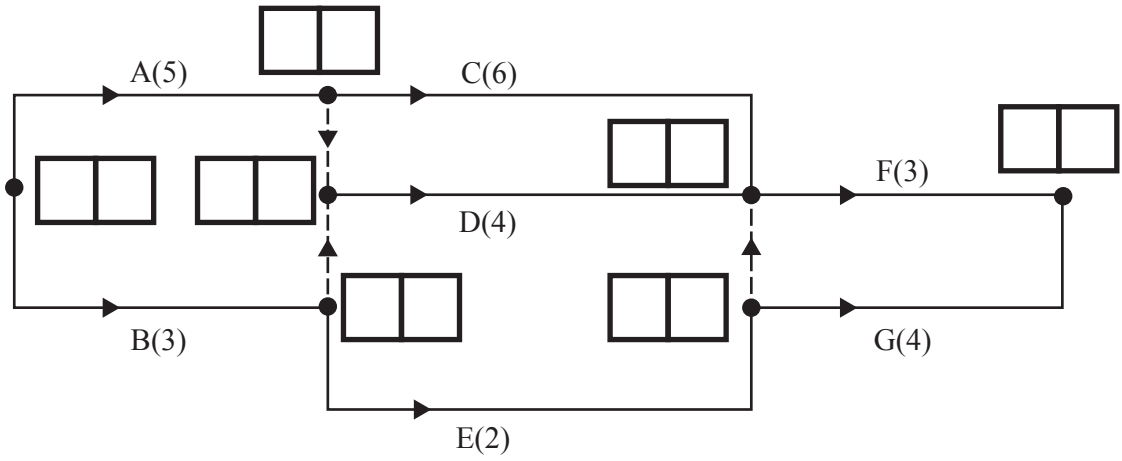
1(a)

<i>X</i>	<i>Y</i>	<i>N</i>	<i>M</i>	<i>H</i>	<i>D</i>

Display:

1(b)

2(a)



2(b)

A	B	C	D	E	F	G

2(c)

Maximum value of $t =$

3(a)(i)	52	38	15	61	27	49	10	33	96	74

3(a)(ii)		Comparisons				Swaps			
	First pass								
	Second pass								
	Third pass								

3(b)(i)	52	38	15	61	27	49	10	33	96	74

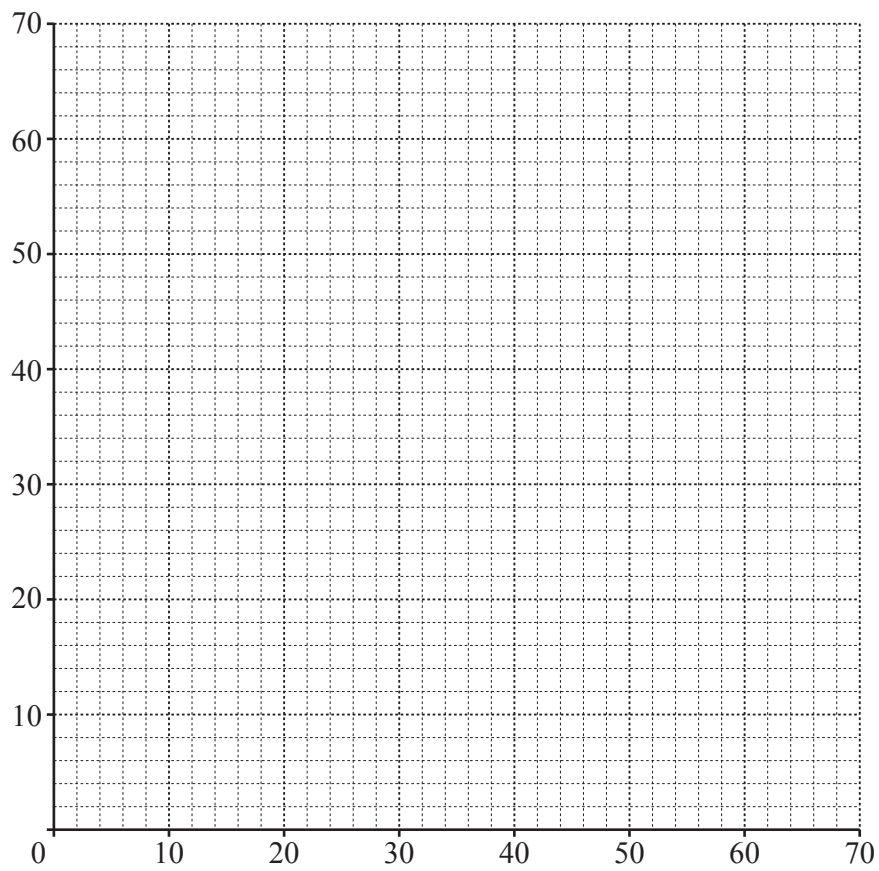
3(b)(ii)		Comparisons				Swaps			
	First pass								
	Second pass								
	Third pass								

3(c)	

4(a)	<table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td></td> <td></td> <td style="text-align: center;">Sam</td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td></td> <td style="text-align: center;">6</td> </tr> <tr> <td style="text-align: right;">Kareem</td> <td style="text-align: center;">2</td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">5</td> <td></td> <td></td> </tr> </table>			Sam				3	4		1		6	Kareem	2				5		
		Sam																			
		3	4																		
	1		6																		
Kareem	2																				
	5																				
4(b)																					
4(c)																					
4(d)																					
4(e)	<p>Expected score for Kareem when he plays the card numbered 2 is</p> <hr/> <hr/> <hr/> <p>Expected score for Kareem when he plays the card numbered 5 is</p> <hr/> <hr/> <hr/>																				

5(a)

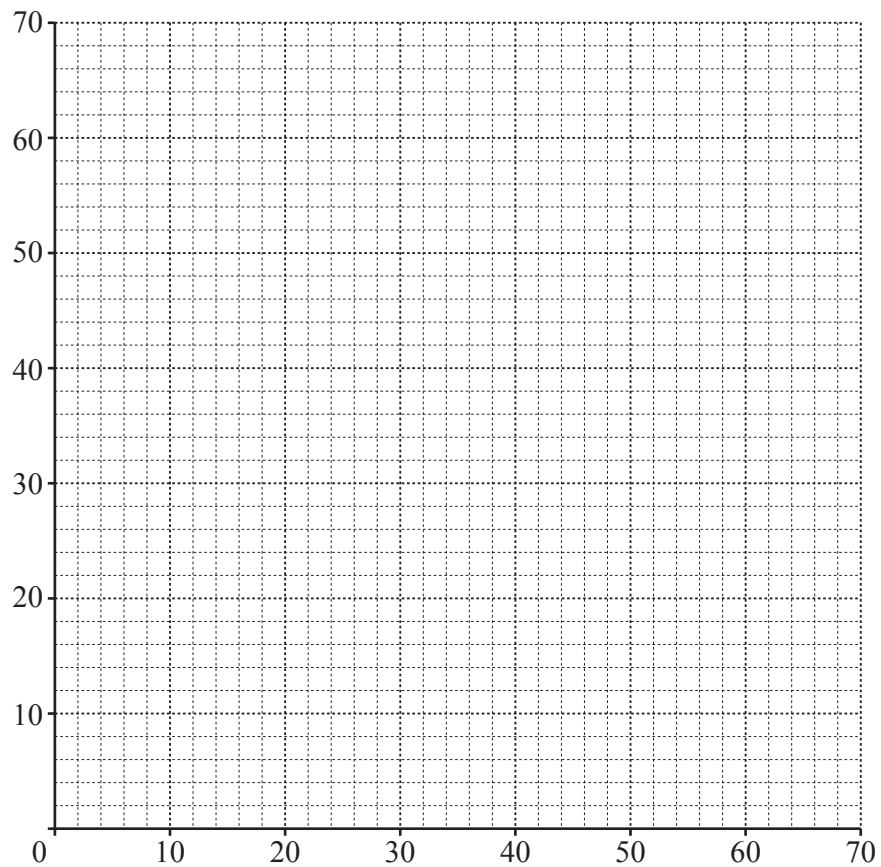
5(b)



5(c)

5(d)

Spare grid – if used please label with question number and part



6(a)	
	Shortest route:
6(b)	
	Shortest route:

6(c)

Pairs of villages:

7(b)	
7(c)(i)	
7(c)(ii)	

