



Oxford Cambridge and RSA

Monday 3 June 2024 – Afternoon

A Level Further Mathematics B (MEI)

Y433/01 Modelling with Algorithms

Printed Answer Booklet

Time allowed: 1 hour 15 minutes



You must have:

- Question Paper Y433/01 (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 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 your final answers to a degree of accuracy that is appropriate to the context.

INFORMATION

- This document has **16** pages.

ADVICE

- Read each question carefully before you start your answer.

2

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PLEASE DO NOT WRITE ON THIS PAGE

1(a)	23	15	17	10	35	18	12	21	22	11	8
1(b)											
1(c)											

2(a)

Key:

Order of labelling

Label

Working values
(do not cross out)

A

H

B

G

C

F

D

E

Shortest path from A to E:

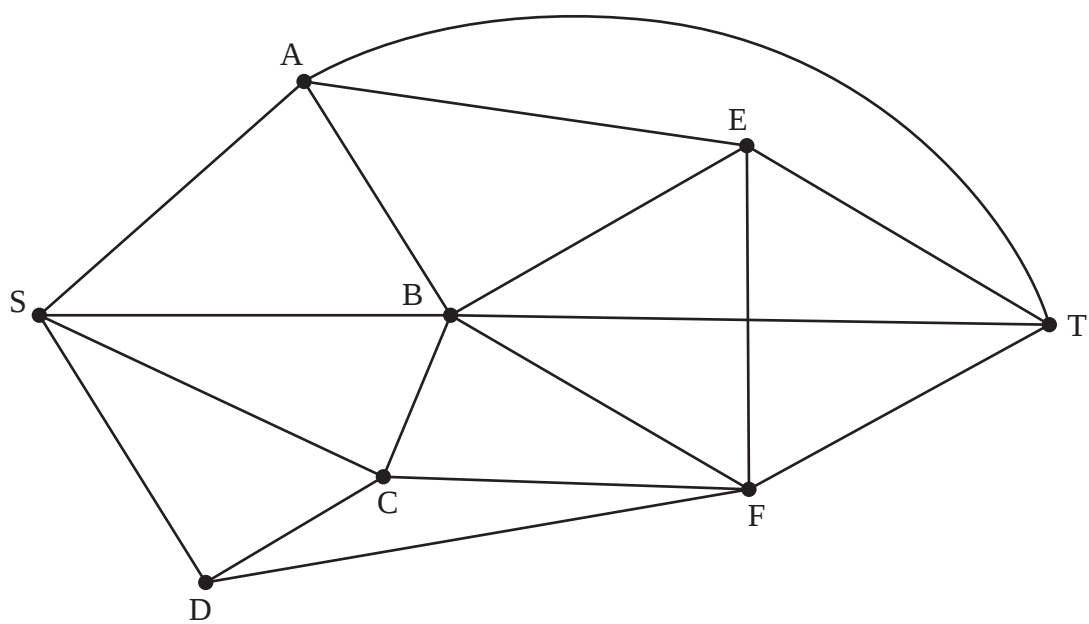
2(b)(i)	<table><tr><td></td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td></tr><tr><td>A</td><td>-</td><td>31</td><td>21</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr><tr><td>B</td><td>31</td><td>-</td><td>8</td><td>12</td><td>-</td><td>-</td><td>10</td><td>20</td></tr><tr><td>C</td><td>21</td><td>8</td><td>-</td><td>24</td><td>-</td><td>35</td><td>20</td><td>36</td></tr><tr><td>D</td><td>-</td><td>12</td><td>24</td><td>-</td><td>30</td><td>-</td><td>-</td><td>-</td></tr><tr><td>E</td><td>-</td><td>-</td><td>-</td><td>30</td><td>-</td><td>12</td><td>40</td><td>10</td></tr><tr><td>F</td><td>-</td><td>-</td><td>35</td><td>-</td><td>12</td><td>-</td><td>-</td><td>25</td></tr><tr><td>G</td><td>-</td><td>10</td><td>20</td><td>-</td><td>40</td><td>-</td><td>-</td><td>15</td></tr><tr><td>H</td><td>-</td><td>20</td><td>36</td><td>-</td><td>10</td><td>25</td><td>15</td><td>-</td></tr></table>		A	B	C	D	E	F	G	H	A	-	31	21	-	-	-	-	-	B	31	-	8	12	-	-	10	20	C	21	8	-	24	-	35	20	36	D	-	12	24	-	30	-	-	-	E	-	-	-	30	-	12	40	10	F	-	-	35	-	12	-	-	25	G	-	10	20	-	40	-	-	15	H	-	20	36	-	10	25	15	-
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H	-	20	36	-	10	25	15	-																																																																										
	Total length:																																																																																	

2(b)(ii)	A H B G C F D E

2(c)	

2(d)	

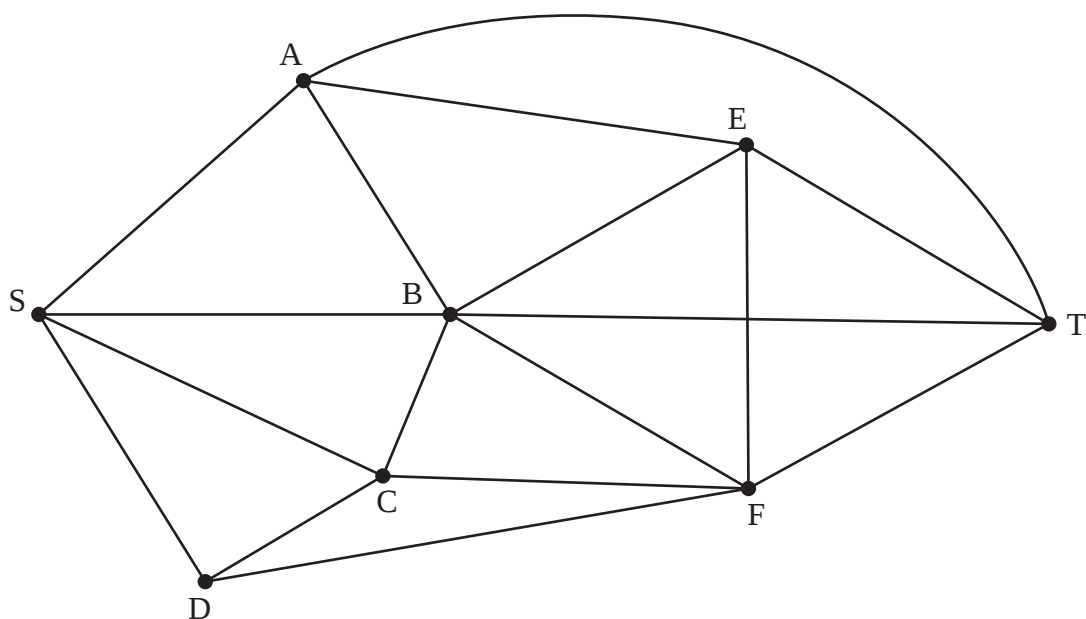
3(a)



3(b)

3(c)

3(d)



Maximum flow through the network:

3(e)

3(f)

4

(answer space continued on next page)

[illegible][illegible]

5(a)	
5(b)(i)	
5(b)(ii)	

5(c)

Activity	Total Float (hours)
A	
B	
C	
D	
E	
F	
G	
H	
I	
J	
K	

5(d)(i)

5(d)(ii)

6(a)	
6(b)	
6(c)	

6(d)

P	x	y	z	s_1	s_2	s_3	RHS
1	-2	0	-1	0	0	1	20
0	1	0	$\frac{11}{3}$	1	0	$-\frac{1}{3}$	$\frac{130}{3}$
0	2	0	-2	0	1	1	40
0	0	1	$-\frac{2}{3}$	0	0	$\frac{1}{3}$	$\frac{20}{3}$

P	x	y	z	s_1	s_2	s_3	RHS

6(e)(i)	$x =$
	$y =$
	$z =$
6(e)(ii)	

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