OXFORD CAMBRIDGE AND RSA EXAMINATIONS

AS GCE

4736/01

MATHEMATICS

Decision Mathematics 1

PRINTED ANSWER BOOK

WEDNESDAY 13 JUNE 2018: Morning

DURATION: 1 hour 30 minutes
plus your additional time allowance
MODIFIED ENLARGED 24pt

Candidate forename		Candidate surname	

Centre number						Candidate number				

Candidates answer on this Printed Answer Booklet.

OCR SUPPLIED MATERIALS:

Question Paper 4736/01
List of Formulae (MF1) sent with standard paper

OTHER MATERIALS REQUIRED:
Scientific or graphical calculator

READ INSTRUCTIONS OVERLEAF

DC (NH/SW) 167763

7898585197

INSTRUCTIONS TO CANDIDATES

These instructions are the same on the Printed Answer Book and the Question Paper.

Write your name, centre number and candidate number in the spaces provided on the Printed Answer Book. Please write clearly and in capital letters.

WRITE YOUR ANSWER TO EACH QUESTION IN THE SPACE PROVIDED IN THE PRINTED ANSWER BOOK. If additional space is required, you should use the lined page(s) at the end of the Printed Answer Book. The question number(s) must be clearly shown.

Use black ink. HB pencil may be used for graphs and diagrams only.

Answer ALL the questions.

Read each question carefully. Make sure you know what you have to do before starting your answer.

You are permitted to use a scientific or graphical calculator in this paper.

Give non-exact numerical answers correct to 3 significant figures unless a different degree of accuracy is specified in the question or is clearly appropriate.

INFORMATION FOR CANDIDATES

This information is the same on the Printed Answer Book and the Question Paper.

The number of marks is given in brackets [ ] at the end of each question or part question on the Question Paper.

YOU ARE REMINDED OF THE NEED FOR CLEAR PRESENTATION IN YOUR ANSWERS.

The total number of marks for this paper is 72.

1 (i)

Shop	A	B	C	D	E	F	G	H
Boxes	500	400	600	300	300	400	300	200

Van 1:

Van 2:

Van 3:

Van 4:

1 (ii)

Shop	A	B	C	D	E	F	G	H
Boxes	500	400	600	300	300	400	300	200

Van 1:

Van 2:

Van 3:

Van 4:

1 (iii)

Shop	A	B	C	D	E	F	G	H
Boxes	500	400	600	300	300	400	300	200

Van 1:

Van 2:

Van 3:

1 (iv)

2 (i)

M	*N*	*P*

2 (ii)

M	*N*	*P*

3 (i)

3 (ii)

3 (iii)

P	x	y	s	t	u	RHS
1	–2	4	0	0	0	0
0	4	–12	1	0	0	12
0	7	–19	0	1	0	35
0	–3	15	0	0	1	0

(answer space continued on next page)

3 (iii) (continued)

A spare copy of this diagram can be found below.

P	*x*	*y*	*s*	*t*	*u*	RHS

Spare copy of the diagram for question 3(iii).

P	*x*	*y*	*s*	*t*	*u*	RHS

3 (iv)

$P =$ _____ $x =$ _____ $y =$ _____

$s =$ _____ $t =$ _____ $u =$ _____

3 (v)

4 (i)

4 (ii)

	M	*N*	*P*	*R*	*S*
M			6		7
N				5	4
P	6			3	2
R		5	3		4
S	7	4	2	4	

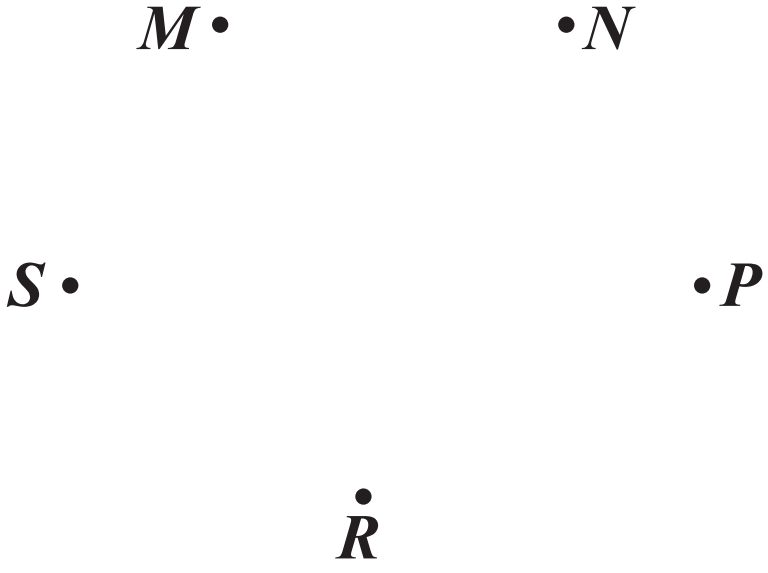
Arcs used (in order of being chosen)

_____

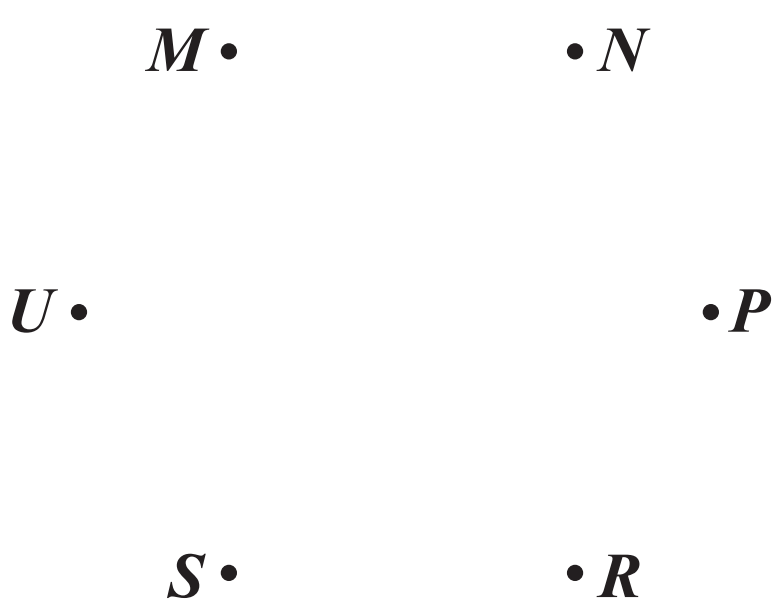
_____

Tree **Total weight**

_____

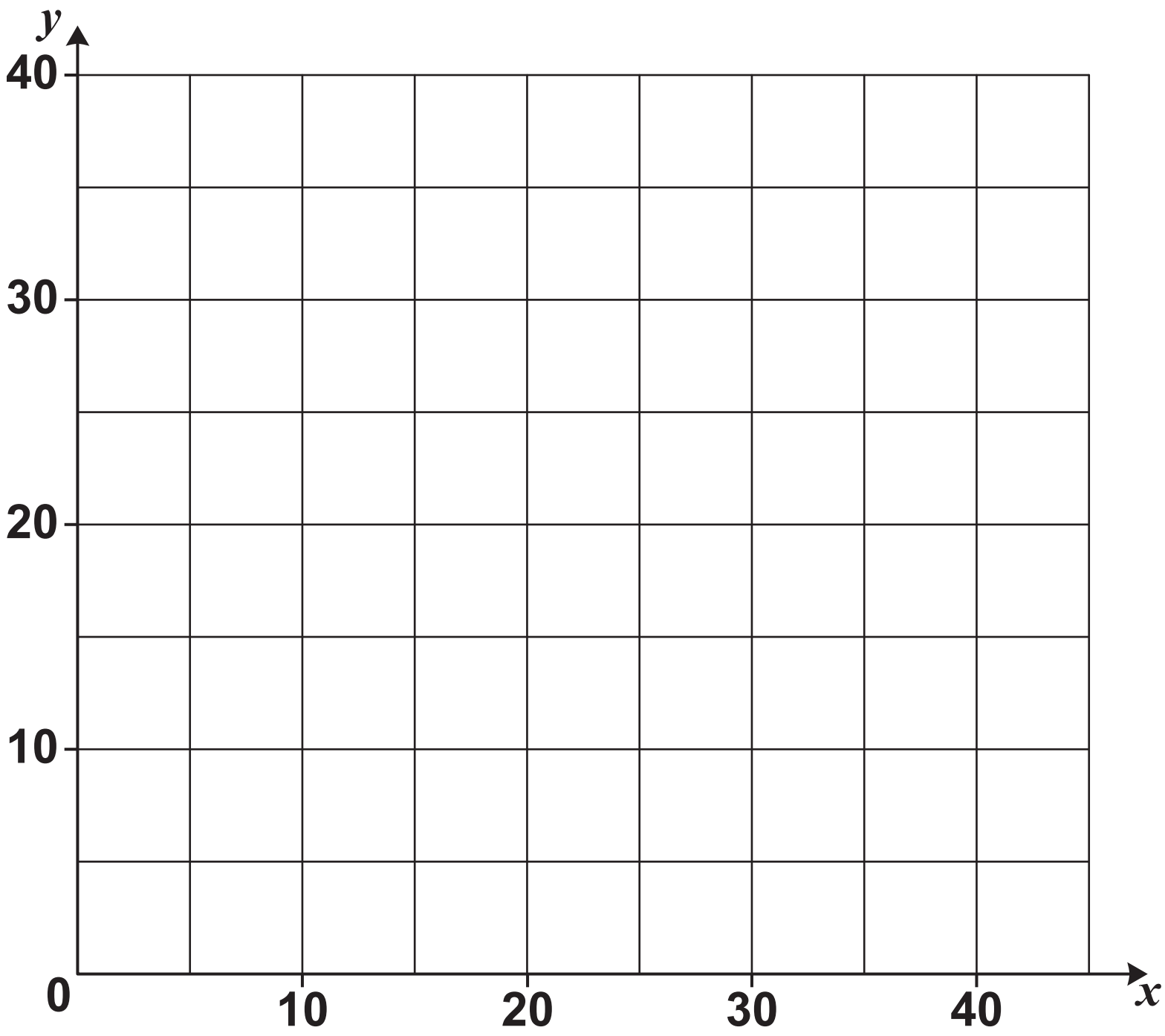


4 (iii)	$x =$
4 (iv)	$x =$
4 (v)	
4 (vi)	
	Upper bound =
4 (vii)	M • • N U • • P S • • R

4 (viii)	

5 (i)	**$3x + 4y \leqslant 120$ because**
	Other constraints (apart from x and y being integers)
5 (ii)	**$P =$**

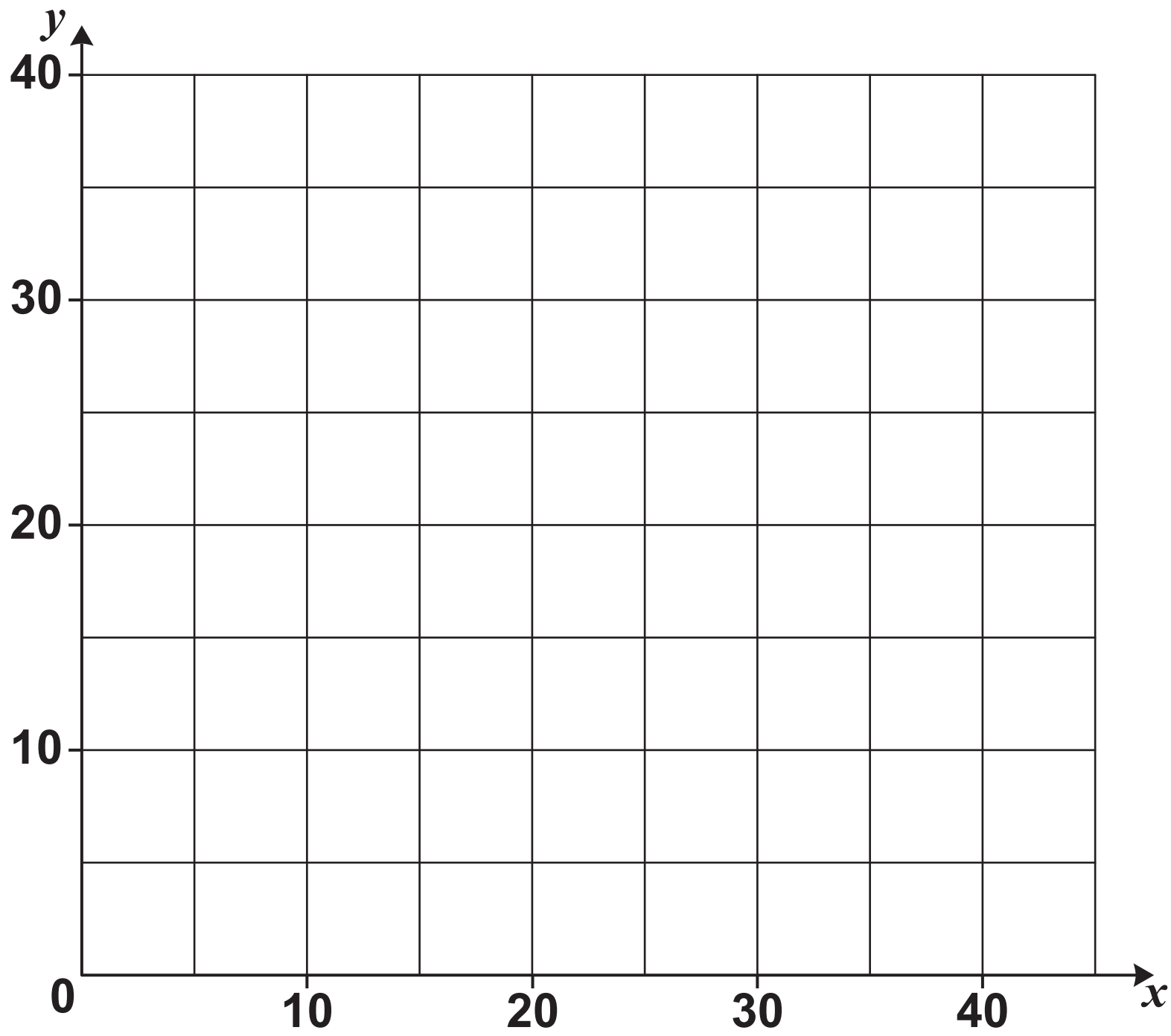
5 (iii) **A spare copy of this diagram can be found on page 16.**



(answer space continued on next page)

5 (iii) (continued)

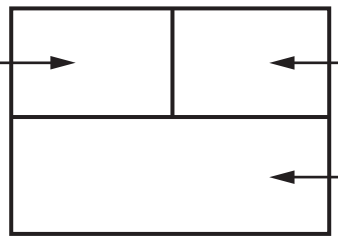
Spare copy of the diagram for question 5(iii).



5 (iv)		
	Small jars	**Large jars**
5 (v)		
	Profit £	

6 (a)(i) **Key:**

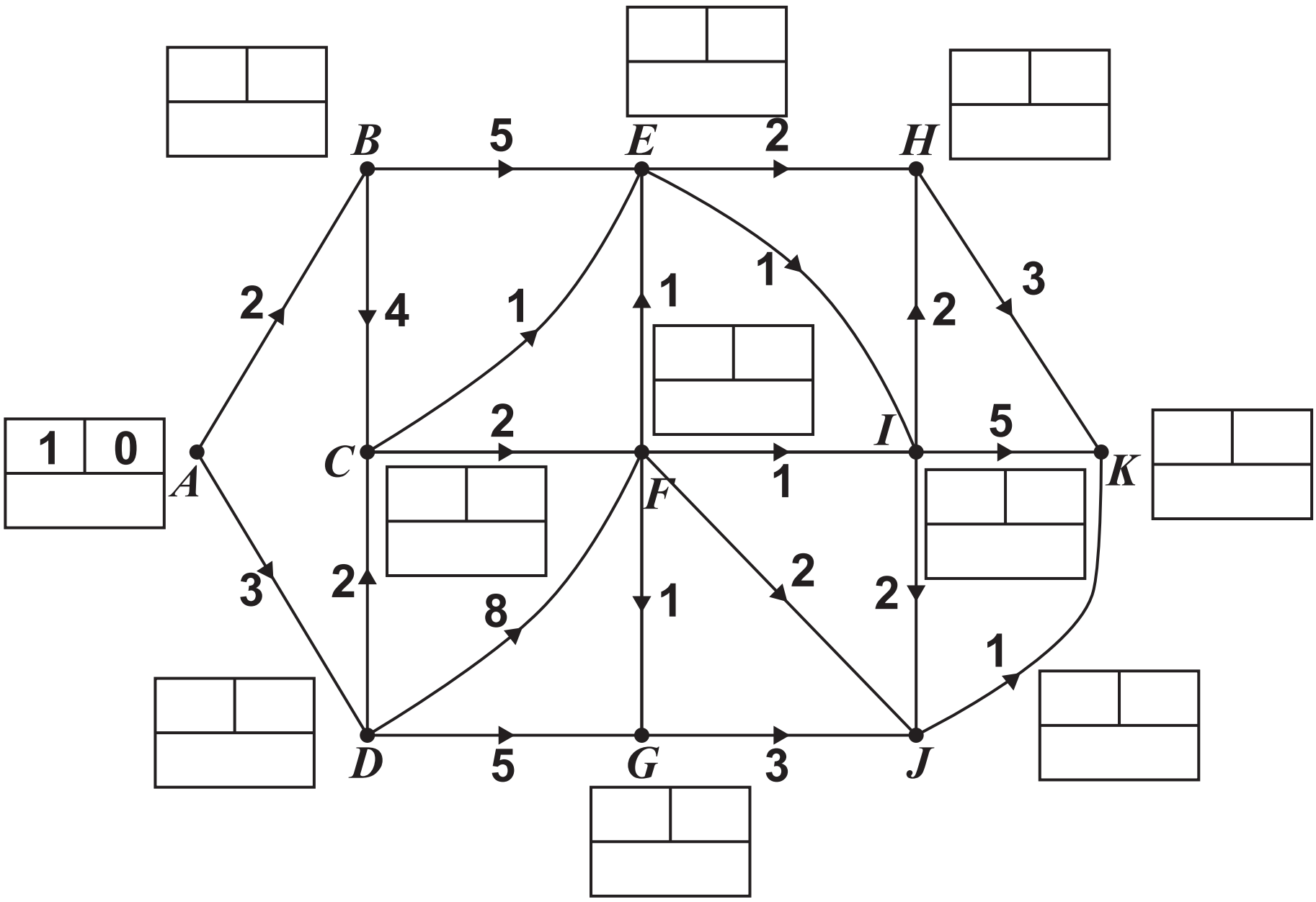
Order of becoming permanent →



← Permanent label

← Temporary labels (working values)

Do not cross out your temporary labels.



Shortest distance: **(in units of 100 m)**
Route(s):

6 (a)(ii)	
	Shortest distance: **(in units of 100 m)**
	Route(s):
6 (b)(i)	
	Minimum distance = **(in units of 100 m)**
	Arcs that represent repeated roads:

6 (b)(ii)	
	Minimum distance = (in units of 100 m)
	Number of times through F =

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).