Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						6	6	9	0	/	0	1 R	Signature	

Paper Reference(s)

6690/01R

Edexcel GCE

Decision Mathematics D2

Advanced/Advanced Subsidiary

Thursday 6 June 2013 – Morning

Examiner's use only

Team Leader's use only

Question Number	Leave Blank
1	
2	
3	
4	
5	
6	
7	
8	
Total	

Answer Book

Do not return the question paper with the answer book

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P 4 2 9 6 3 R A 0 1 2 0

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PEARSON

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1. (a) *You may not need to use all of these tables*

	1	2	3	4
C				
J				
K				
N				

	1	2	3	4
C				
J				
K				
N				

	1	2	3	4
C				
J				
K				
N				

	1	2	3	4
C				
J				
K				
N				

	1	2	3	4
C				
J				
K				
N				

	1	2	3	4
C				
J				
K				
N				

Leave blank

Question 1 continued

	1	2	3	4
C				
J				
K				
N				

	1	2	3	4
C				
J				
K				
N				

	1	2	3	4
C				
J				
K				
N				

	1	2	3	4
C				
J				
K				
N				

(b)

Worker	Task
Chris	
James	
Katie	
Nicky	

Maximum total profit: £ _____

Q1

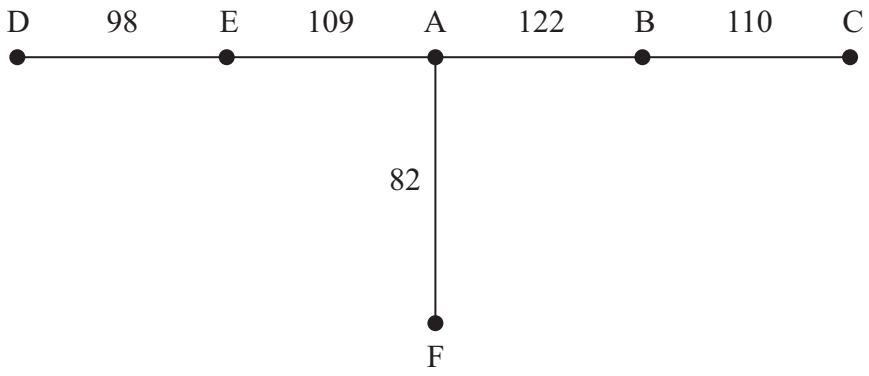
(Total 10 marks)

Leave blank

2.

	A	B	C	D	E	F
A	–	122	217	137	109	82
B	122	–	110	130	128	204
C	217	110	–	204	238	135
D	137	130	204	–	98	211
E	109	128	238	98	–	113
F	82	204	135	211	113	–

(a)



P 4 2 9 6 3 R A 0 4 2 0

Leave blank

Question 2 continued

(b)

	A	B	C	D	E	F
A	–	122	217	137	109	82
B	122	–	110	130	128	204
C	217	110	–	204	238	135
D	137	130	204	–	98	211
E	109	128	238	98	–	113
F	82	204	135	211	113	–

(c)

	A	B	C	D	E	F
A	–	122	217	137	109	82
B	122	–	110	130	128	204
C	217	110	–	204	238	135
D	137	130	204	–	98	211
E	109	128	238	98	–	113
F	82	204	135	211	113	–

Q2

(Total 8 marks)

Leave blank

3.

	1	2	3	4	Supply
A	22	36	19	37	35
B	29	35	30	36	15
C	24	32	25	41	20
D	23	30	23	38	30
Demand	30	20	30	20	

Table 1

(a)

	1	2	3	4
A	30	5		
B		15	0	
C			20	
D			10	20

Table 2

(b)

	1	2	3	4
A	x	x		
B		x	x	
C	8	2	x	1
D	9	2	x	x

Table 3

P 4 2 9 6 3 R A 0 6 2 0

Leave blank

Question 3 continued

(c) *You may not need to use all of these tables*

	1	2	3	4
A				
B				
C				
D				

	1	2	3	4
A				
B				
C				
D				

	1	2	3	4
A				
B				
C				
D				

	1	2	3	4
A				
B				
C				
D				

	1	2	3	4
A				
B				
C				
D				

Q3

(Total 8 marks)

Leave blank

4.

	S plays 1	S plays 2	S plays 3
R plays 1	2	1	3
R plays 2	1	–1	2
R plays 3	–1	3	–3

Leave blank

Question 4 continued

Q4

(Total 9 marks)

P 4 2 9 6 3 R A 0 9 2 0

Turn over

Leave blank

5.

b.v.	x	y	z	r	s	t	Value
r	$\frac{1}{2}$	$-\frac{1}{2}$	0	1	0	$-\frac{1}{2}$	10
s	$1\frac{1}{2}$	$2\frac{1}{2}$	0	0	1	$-\frac{1}{2}$	5
z	$\frac{1}{2}$	$\frac{1}{2}$	1	0	0	$\frac{1}{2}$	5
P	–5	–10	0	0	0	20	220

(a) *You may not need to use all of these tableaux*

b.v.	x	y	z	r	s	t	Value	Row Ops

b.v.	x	y	z	r	s	t	Value	Row Ops

Leave blank

Question 5 continued

b.v.	x	y	z	r	s	t	Value	Row Ops

b.v.	x	y	z	r	s	t	Value	Row Ops

(b)

(c)

Q5

(Total 8 marks)

Leave blank

6. (a) Value of initial flow _____

(b) and (c)

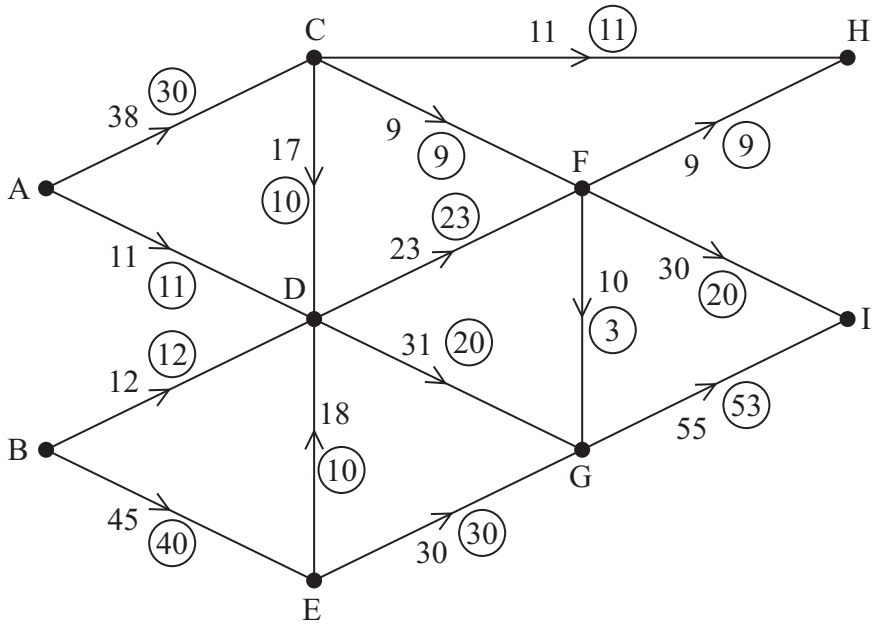


Diagram 1

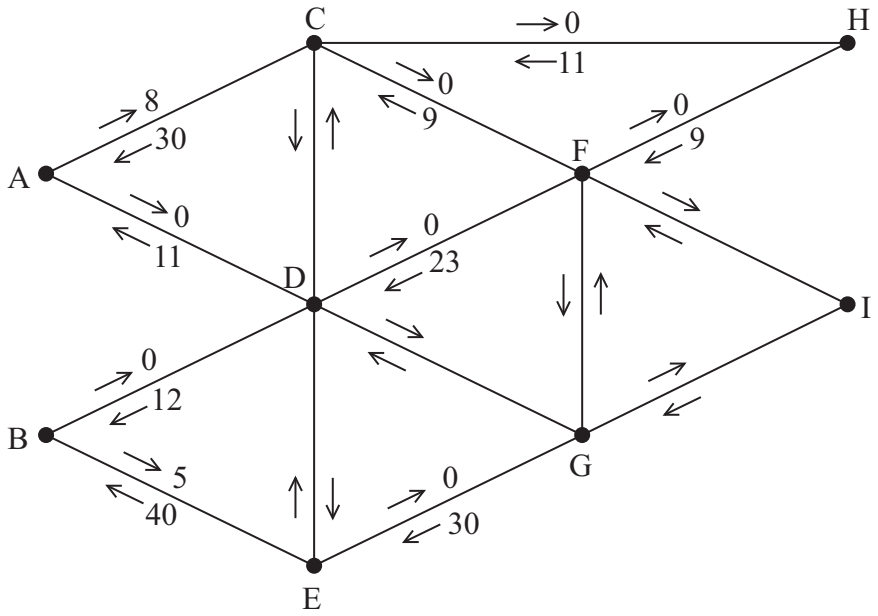


Diagram 2

P 4 2 9 6 3 R A 0 1 2 2 0

Leave blank

Question 6 continued

(d)

(e)

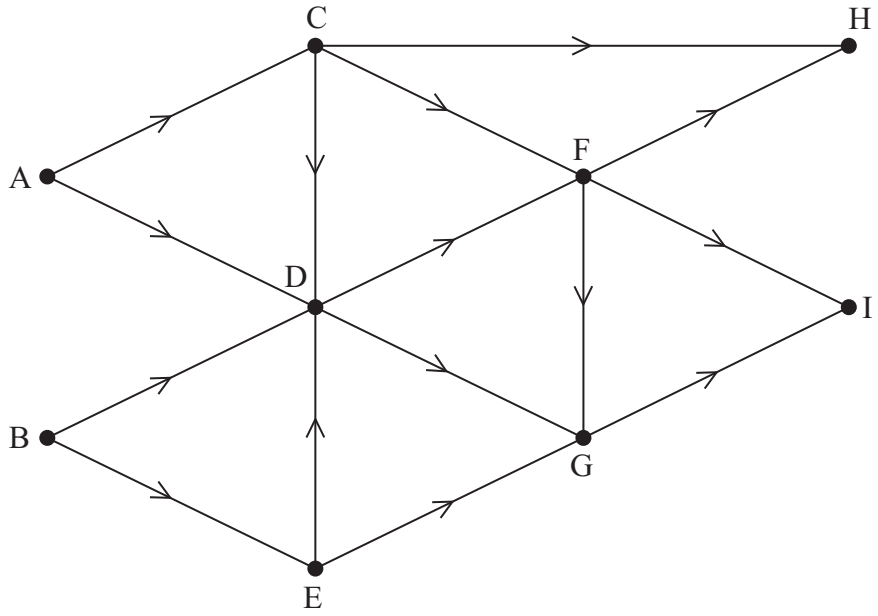


Diagram 3

(f)

Q6

(Total 13 marks)

P 4 2 9 6 3 R A 0 1 3 2 0

Turn over

Leave blank

7.

	B plays 1	B plays 2	B plays 3
A plays 1	1	–3	2
A plays 2	–2	3	–1
A plays 3	5	–1	0

Leave blank

Question 7 continued

Q7

(Total 7 marks)

Leave blank

8. *You may not need to use all the rows of this table*

Stage	State	Action	Dest.	Value

Leave blank

Question 8 continued

Stage	State	Action	Dest.	Value

Carrots	Fresh	Frozen	Canned
Number of units			

Maximum monthly profit £ _____

Q8

(Total 12 marks)

TOTAL FOR PAPER: 75 MARKS

END

P 4 2 9 6 3 R A 0 1 7 2 0