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

Paper Reference(s)

6690/01

Edexcel GCE

Decision Mathematics D2

Advanced/Advanced Subsidiary

Friday 11 June 2010 – Morning

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

Answer Book

Do not return the question paper with the answer book.

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N 3 5 4 0 0 A 0 1 1 6

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1. (a) and (b)

	A	B	C	D	E	F
A	-	36	18	28	24	22
B	36	-	54	22	20	27
C	18	54	-	42	27	24
D	28	22	42	-	20	30
E	24	20	27	20	-	13
F	22	27	24	30	13	-

(c)

	A	B	C	D	E	F
A	-	36	18	28	24	22
B	36	-	54	22	20	27
C	18	54	-	42	27	24
D	28	22	42	-	20	30
E	24	20	27	20	-	13
F	22	27	24	30	13	-

Leave blank

Question 1 continued

	A	B	C	D	E	F
A	-	36	18	28	24	22
B	36	-	54	22	20	27
C	18	54	-	42	27	24
D	28	22	42	-	20	30
E	24	20	27	20	-	13
F	22	27	24	30	13	-

(d) Best upper bound: _____

(e)

	A	B	C	D	E	F
A	-	36	18	28	24	22
B	36	-	54	22	20	27
C	18	54	-	42	27	24
D	28	22	42	-	20	30
E	24	20	27	20	-	13
F	22	27	24	30	13	-

(Total 11 marks)

Q1

Leave blank

2. *You may not need to use all of these tables*

(a)

	1	2	3	4
H				
J				
L				
S				

	1	2	3	4
H				
J				
L				
S				

	1	2	3	4
H				
J				
L				
S				

	1	2	3	4
H				
J				
L				
S				

Leave blank

Question 2 continued

	1	2	3	4
H				
J				
L				
S				

	1	2	3	4
H				
J				
L				
S				

	1	2	3	4
H				
J				
L				
S				

(b)

Worker	**Task**
Harry	
Jess	
Louis	
Saul	

£ _____

Q2

(Total 10 marks)

Leave blank

3. (a)

	A	B	C	D	Supply
X					53
Y					47
Demand	18	31	22	29	

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

	A	B	C	D
X				
Y				

	A	B	C	D
X				
Y				

	A	B	C	D
X				
Y				

	A	B	C	D
X				
Y				

	A	B	C	D
X				
Y				

Leave blank

Question 3 continued

	A	B	C	D
X				
Y				

	A	B	C	D
X				
Y				

	A	B	C	D
X				
Y				

	A	B	C	D
X				
Y				

(c)

Q3

(Total 11 marks)

Leave blank

4. (a) *You may not need to use all these rows*

Stage	State	Action	Destination	Value

N 3 5 4 0 0 A 0 8 1 6

Leave blank

Question 4 continued

Stage	State	Action	Destination	Value

(b) Route: _____

Greatest annual cost: _____

(c)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

(Total 13 marks)

Q4

5. (a) Value of initial flow: _____

(b) Capacity of C_1: _____

Capacity of C_2: _____

(c)

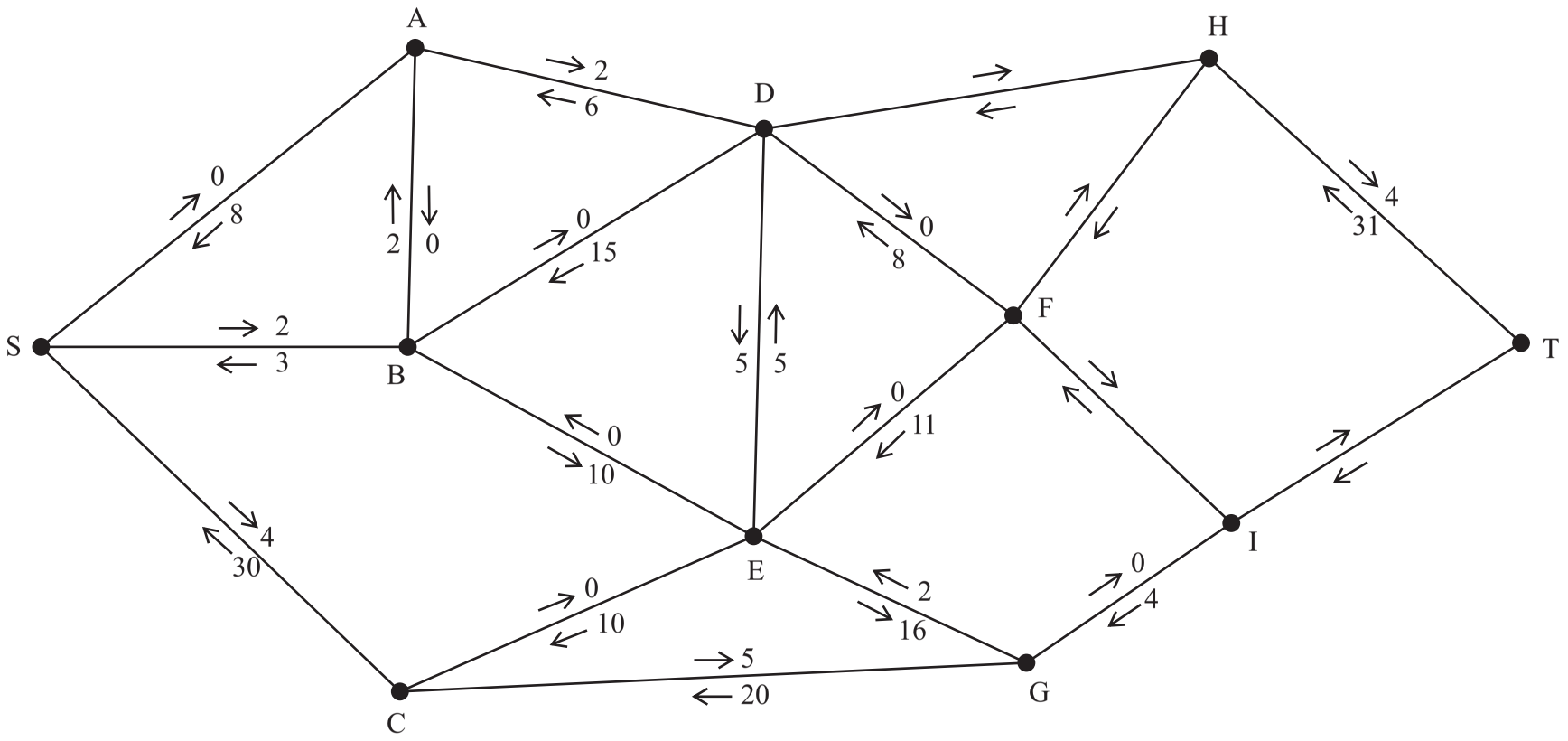

Diagram 1

Leave blank

N 3 5 4 0 0 A 0 1 0 1 6

Leave blank

Question 5 continued

(d)

(e)

(Total 10 marks)

Q5

Leave blank

6. (a)

b.v.	x	y	z	r	s	t	Value
r	0	1	2	1	0	0	24
s	2	1	4	0	1	0	28
t	–1	$\frac{1}{2}$	3	0	0	1	22
P	–1	–2	–6	0	0	0	0

You may not need to use all of these tableaux

(b)

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

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

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

N 3 5 4 0 0 A 0 1 2 1 6

Leave blank

Question 6 continued

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

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

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

(c)

Q6

(Total 13 marks)

Leave blank

7.

	B plays 1	B plays 2	B plays 3
A plays 1	–4	5	1
A plays 2	3	–1	–2
A plays 3	–3	0	2

Leave blank

Question 7 continued

Q7

(Total 7 marks)

TOTAL FOR PAPER: 75 MARKS

END

N 3 5 4 0 0 A 0 1 5 1 6