

Please check the examination details below before entering your candidate information

Candidate surname

Other names

**Pearson Edexcel
Level 3 GCE**

Centre Number

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Candidate Number

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Time 1 hour 30 minutes

**Paper
reference**

9FM0/3D

Further Mathematics

Advanced

PAPER 3D: Decision Mathematics 1



Answer book

Do not return the question paper with the answer book.

Total Marks

Turn over ►

P66801A

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1/1/1/1/



P 6 6 8 0 1 A 0 1 2 0



Pearson

1.

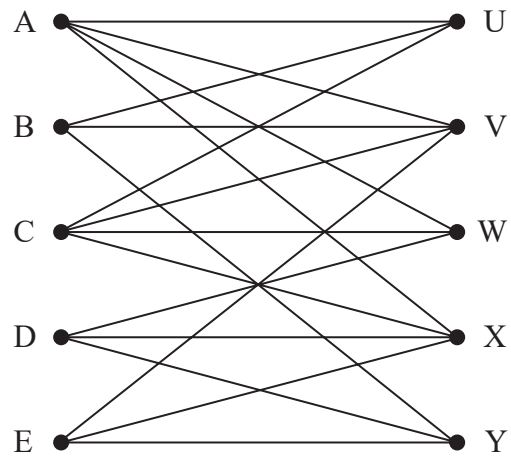


Figure 1

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

Question 1 continued

Lined area for writing answers.

(Total for Question 1 is 4 marks)



2.

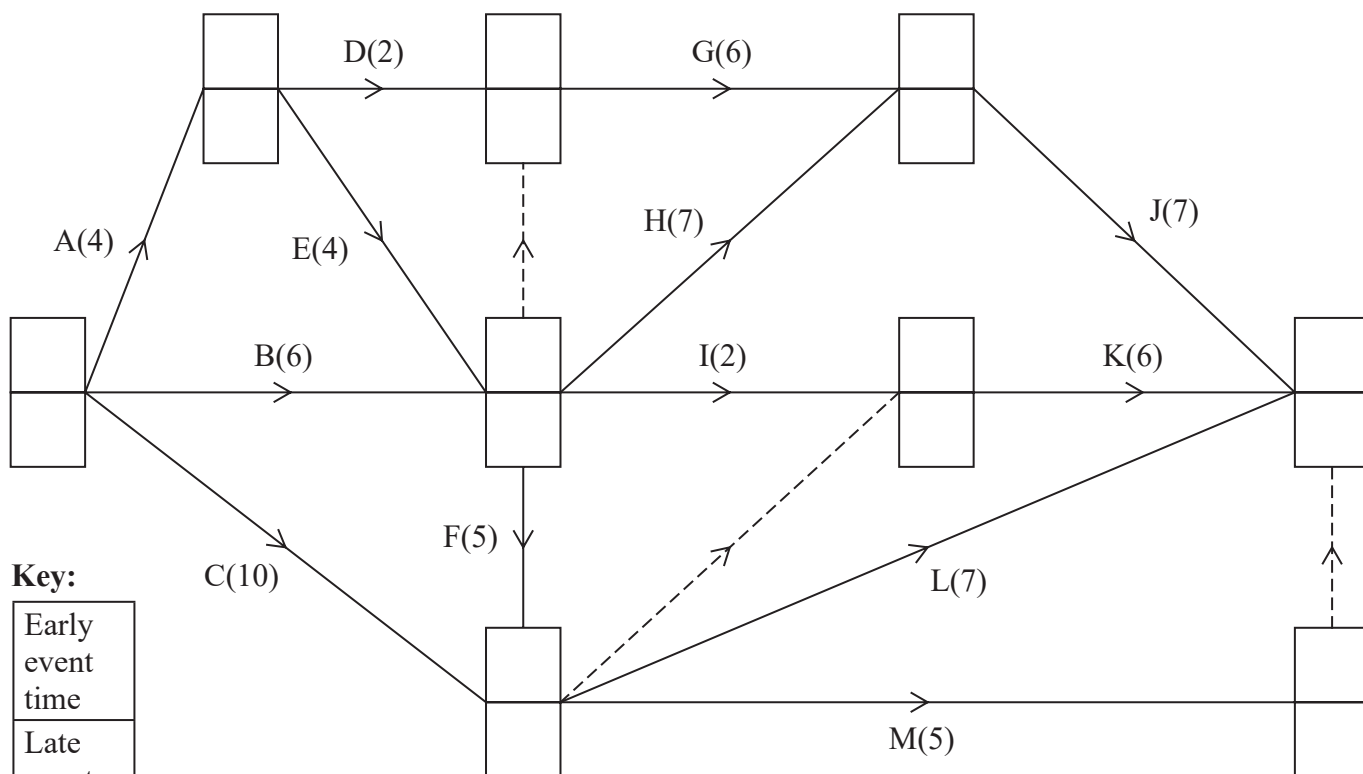


Diagram 1

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

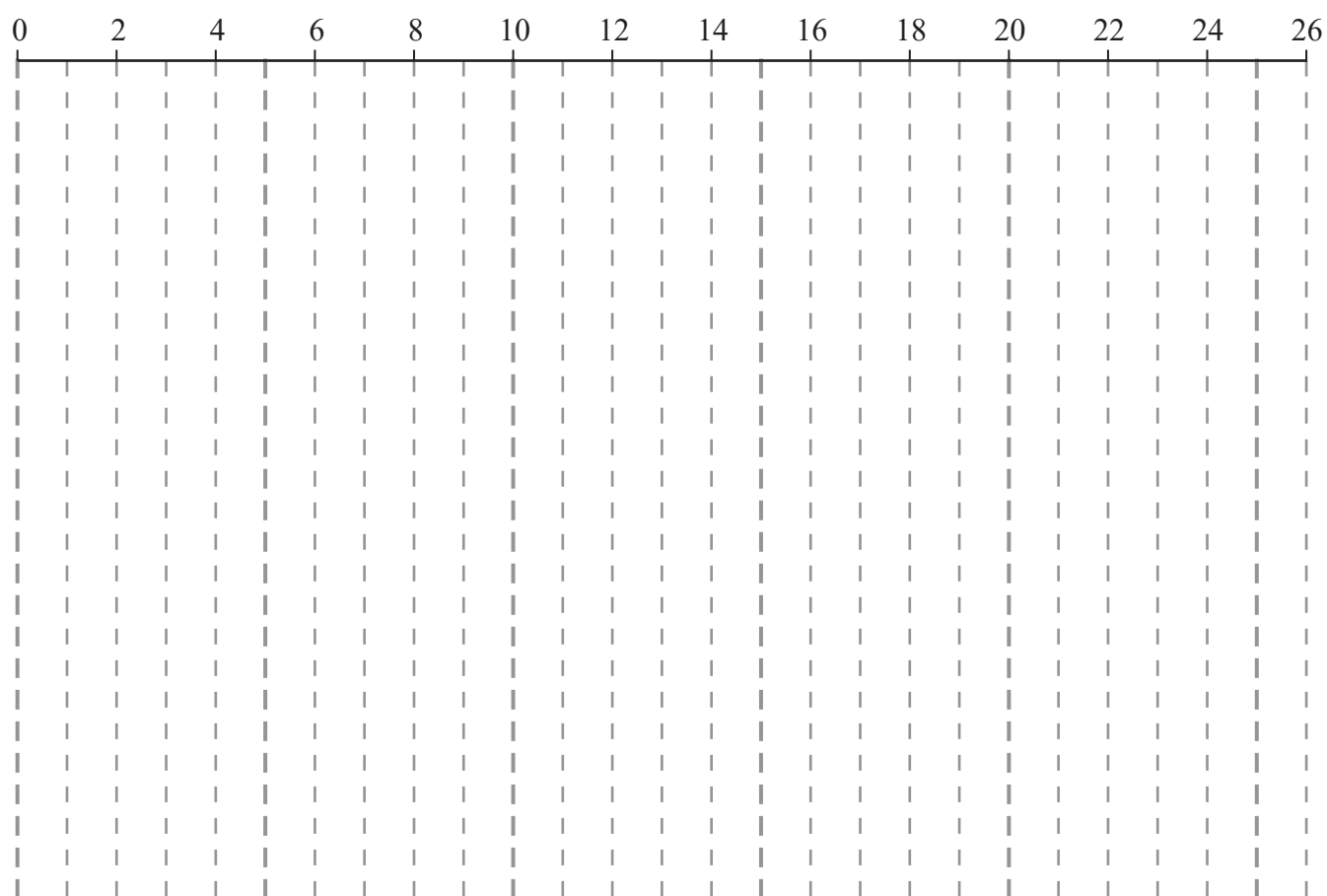
DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

[illegible]

(Total for Question 2 is 9 marks)



3.

	A	B	C	D	E	F	G	H
A	–	24	42	48	34	37	32	22
B	24	–	40	35	30	41	39	44
C	42	40	–	21	26	45	38	36
D	48	35	21	–	32	37	29	27
E	34	30	26	32	–	34	40	28
F	37	41	45	37	34	–	43	41
G	32	39	38	29	40	43	–	38
H	22	44	36	27	28	41	38	–

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



4. (a)

Initial time matrix

	A	B	C	D	E	F
A						
B						
C						
D						
E						
F						

Initial route matrix

	A	B	C	D	E	F
A	A	B	C	D	E	F
B	A	B	C	D	E	F
C	A	B	C	D	E	F
D	A	B	C	D	E	F
E	A	B	C	D	E	F
F	A	B	C	D	E	F

(b) 1st iteration

Time matrix

	A	B	C	D	E	F
A						
B						
C						
D						
E						
F						

Route matrix

	A	B	C	D	E	F
A						
B						
C						
D						
E						
F						

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

Question 4 continued

Lined area for writing answers.

(Total for Question 4 is 8 marks)



5. 30 12 5 2 23 18 36 10 15 24

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

Question 5 continued

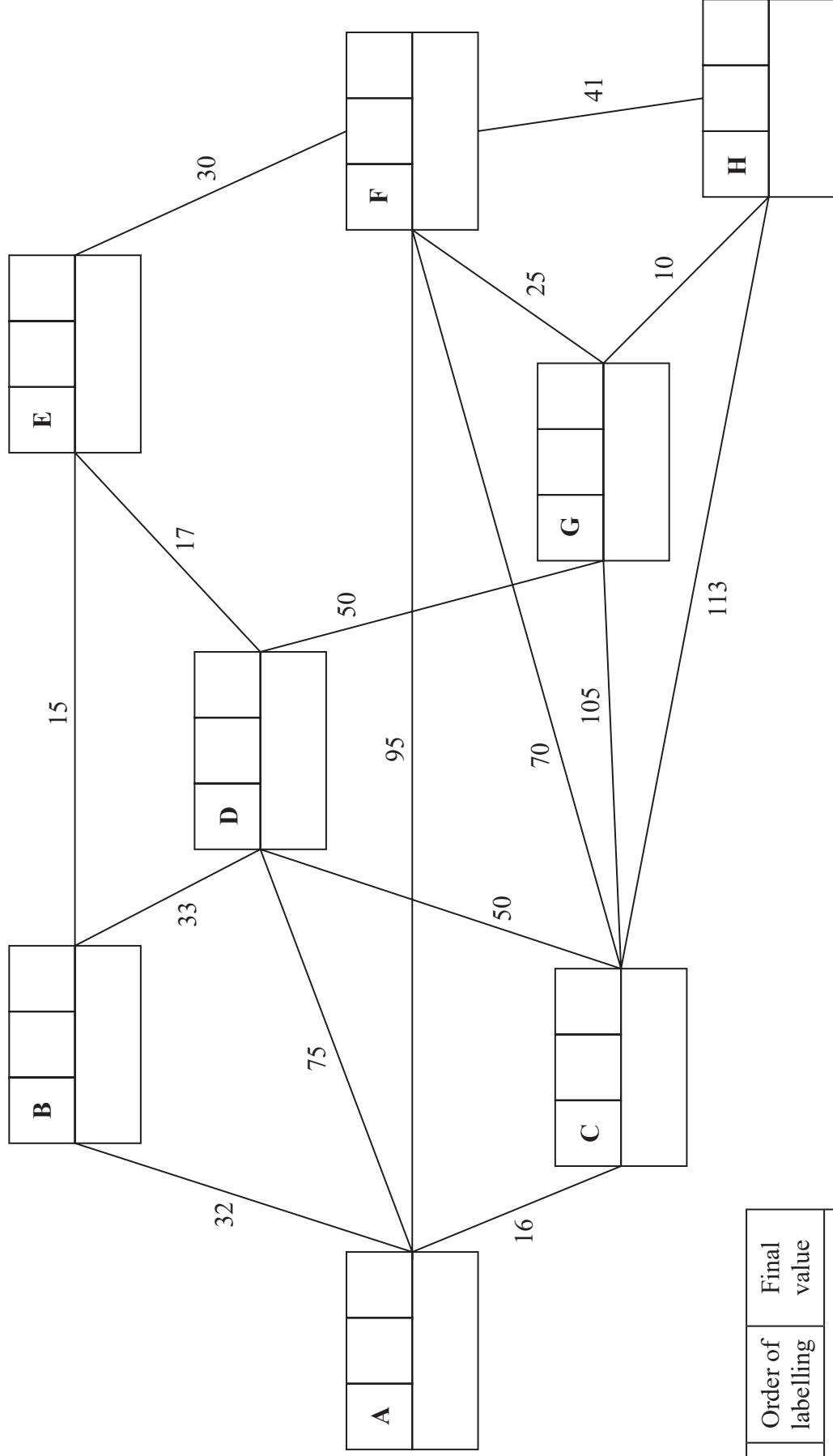
Lined area for writing answers.

(Total for Question 5 is 10 marks)





6.



Key:

Vertex	Order of labelling	Final value
Working values		

Shortest path from A to H: _____

Length of shortest path from A to H: _____

DO NOT WRITE IN THIS AREA

Question 6 continued

Lined area for writing answers.

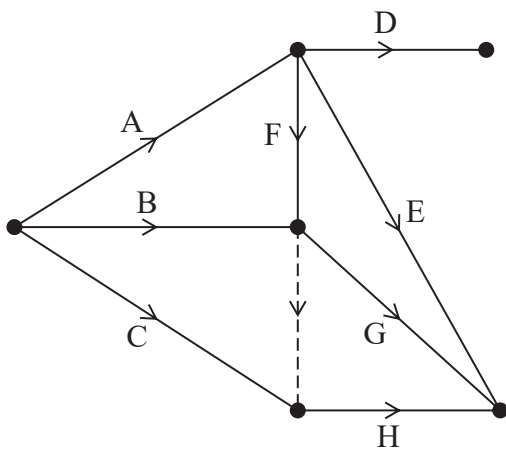
(Total for Question 6 is 10 marks)



7. (a)

Activity	Immediately preceding activities
A	
B	
C	
D	

Activity	Immediately preceding activities
E	
F	
G	
H	



DO NOT WRITE IN THIS AREA

Question 7 continued

Lined area for writing answers.

(Total for Question 7 is 8 marks)



8.

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

b.v.	x	y	z	s_1	s_2	s_3	a_1	Value
P								
I								

Question 8 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Question 8 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(Total for Question 8 is 18 marks)

TOTAL FOR PAPER IS 75 MARKS

