

Paper Reference(s)

6689

Edexcel GCE

Decision Mathematics D1

(New Syllabus)

Advanced/Advanced Subsidiary

January 2002

Answer Booklet

1. (b)

$A \bullet \qquad \qquad \qquad \bullet 1$

$B \bullet \qquad \qquad \qquad \bullet 2$

$D \bullet \qquad \qquad \qquad \bullet 3$

$G \bullet \qquad \qquad \qquad \bullet 4$

$N \bullet \qquad \qquad \qquad \bullet 5$

(c)

.....

2. (i) _____

(ii) _____

3. (i) (a)

	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
<i>A</i>	–	10	12	13	20	9
<i>B</i>	10	–	7	15	11	7
<i>C</i>	12	7	–	11	18	3
<i>D</i>	13	15	11	–	27	8
<i>E</i>	20	11	18	27	–	18
<i>F</i>	9	7	3	8	18	–

(b) Minimum spanning tree

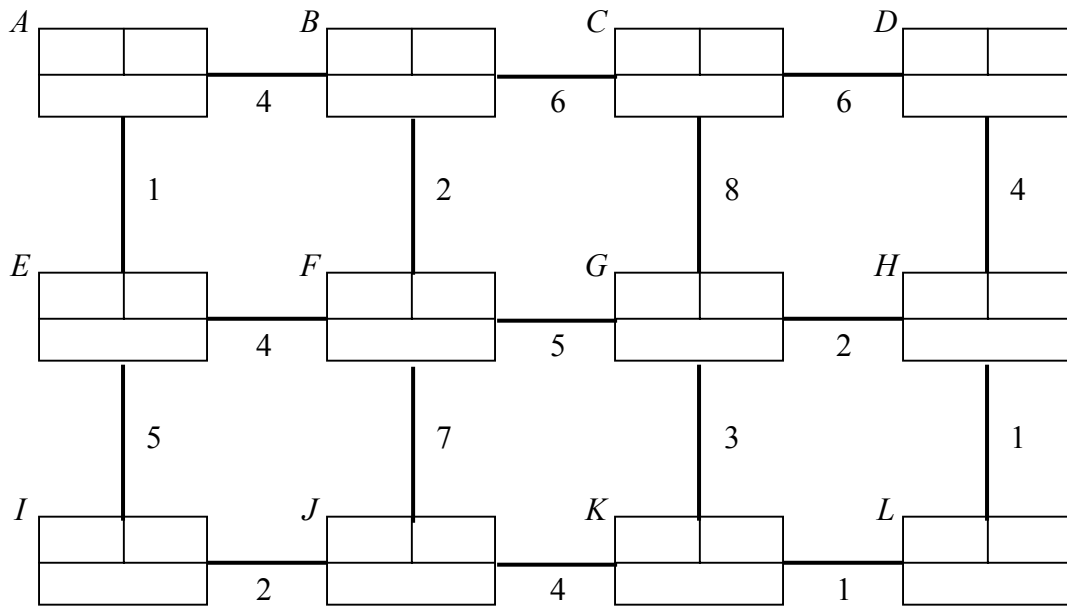
Total length.....

(c)

(ii) (a)

(b)

4. (a)



KEY

Order of Labelling	Final Value
Working Values	

Quickest route _____

(b) Another route which takes the minimum time.

5. (a)

.....

.....

.....

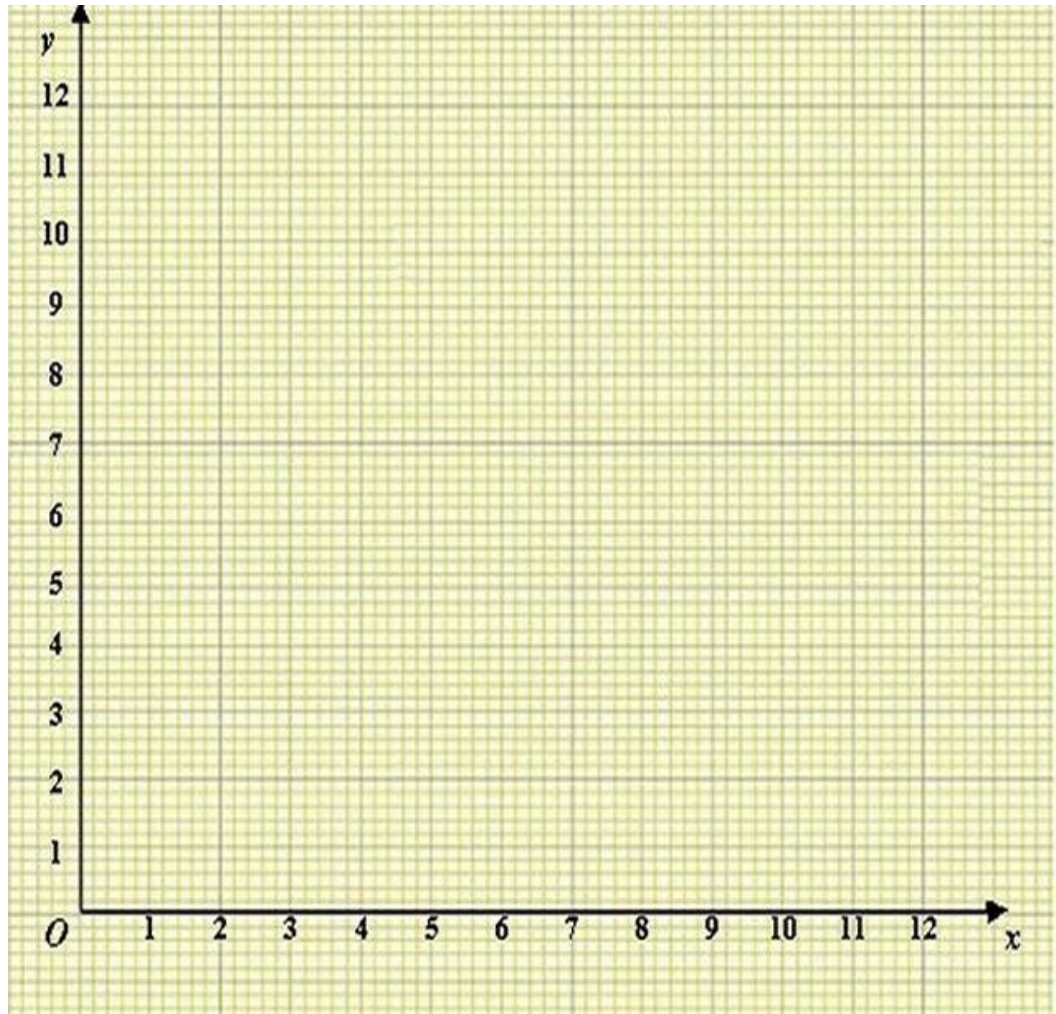
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(b)



(c) Total cost

(d)

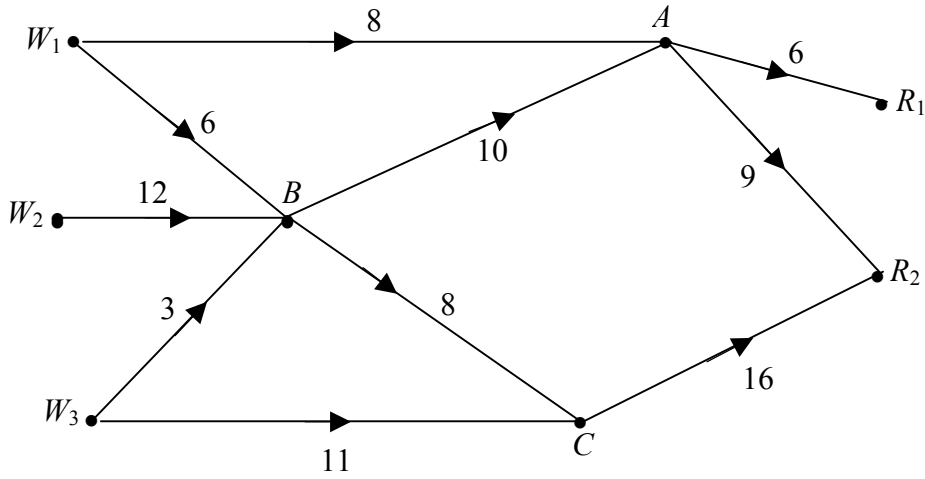
Value of x _____

Value of y _____

Minimum value of T _____

(e)

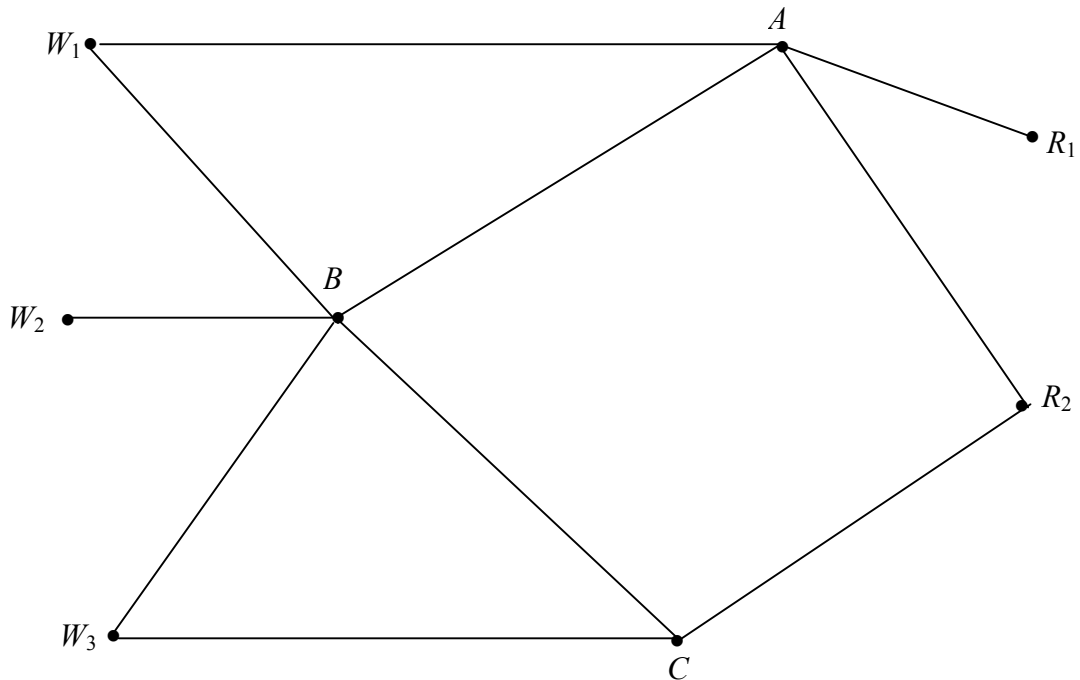
6. (a) **Diagram 1**



(b) (i) $W \ W_1 \ A \ R_1 \ R$

(ii) $W \ W_3 \ C \ R_2 \ R$

(c) **Diagram 2**



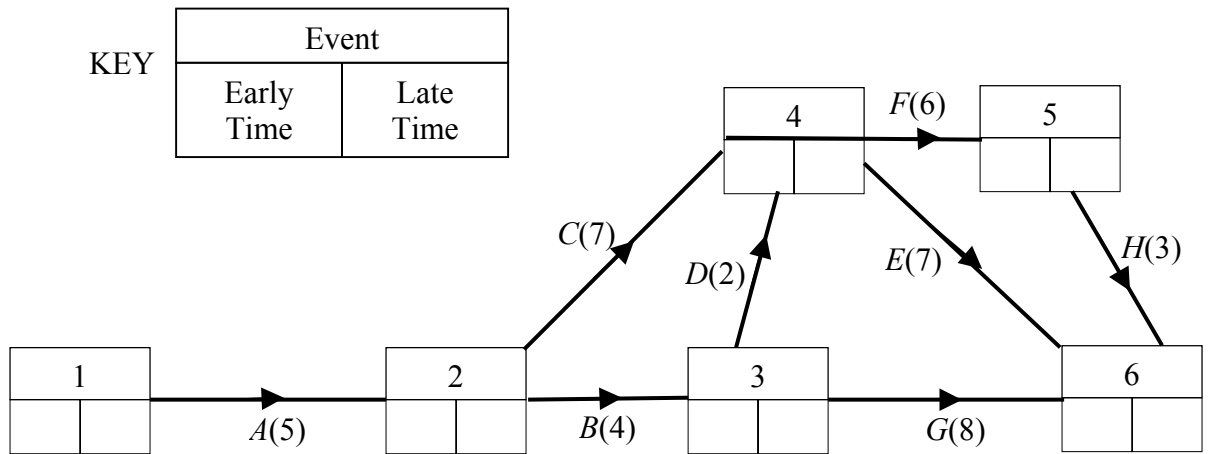
Flow-augmented routes.

Maximal flow through network from W to R .

(d) Number of vans passing through B . _____

(e)

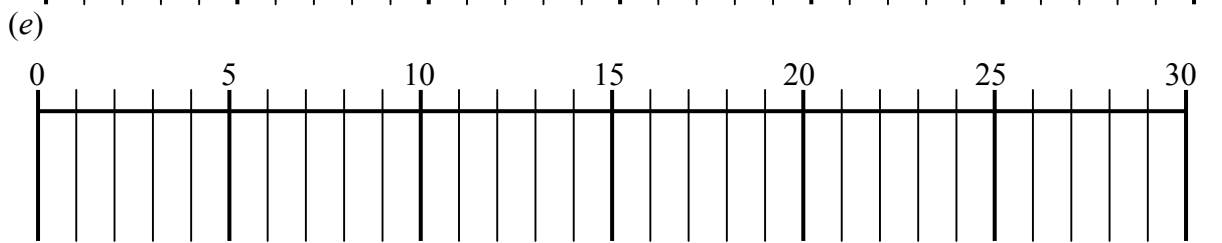
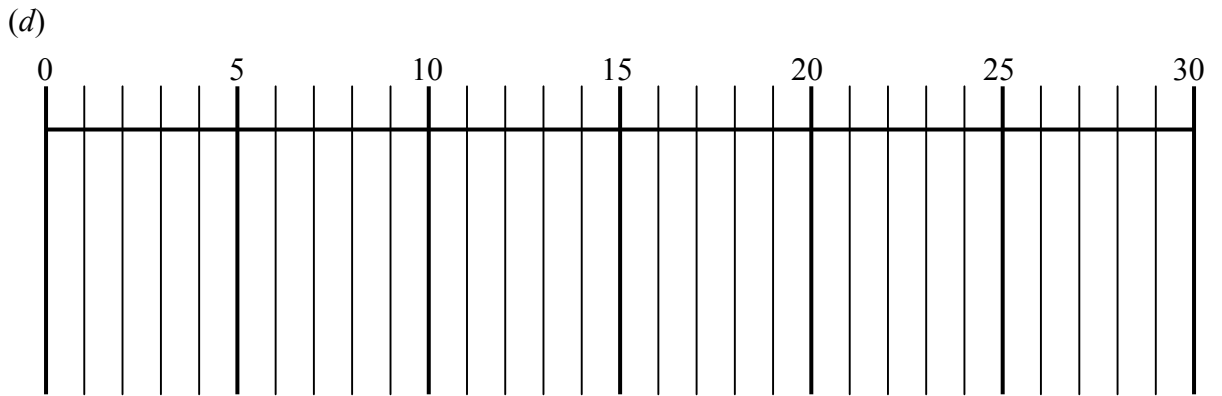
7. (a)



(b) Critical activities.....

Length of critical path

(c) Total floats



Minimum time