Write your answers in the D1 answer book for this paper.

1. The table below shows the distances, in metres, between six vertices, A, B, C, D, E and F, in a network.

	A	**B**	**C**	**D**	**E**	**F**
A	–	18	23	17	28	19
B	18	–	20	11	–	24
C	23	20	–	–	25	13
D	17	11	–	–	–	22
E	28	–	25	–	–	–
F	19	24	13	22	–	–

(a) Draw the weighted network using the vertices given in Diagram 1 in the answer book.

(2)

(b) Use Kruskal's algorithm to find a minimum spanning tree for the network. You should list the edges in the order that you consider them and state whether you are adding them to your minimum spanning tree.

(3)

(c) Draw the minimum spanning tree on Diagram 2 in the answer book and state its total weight.

(2)

(Total 7 marks)

Leave blank

1.

	A	B	C	D	E	F
A	–	18	23	17	28	19
B	18	–	20	11	–	24
C	23	20	–	–	25	13
D	17	11	–	–	–	22
E	28	–	25	–	–	–
F	19	24	13	22	–	–

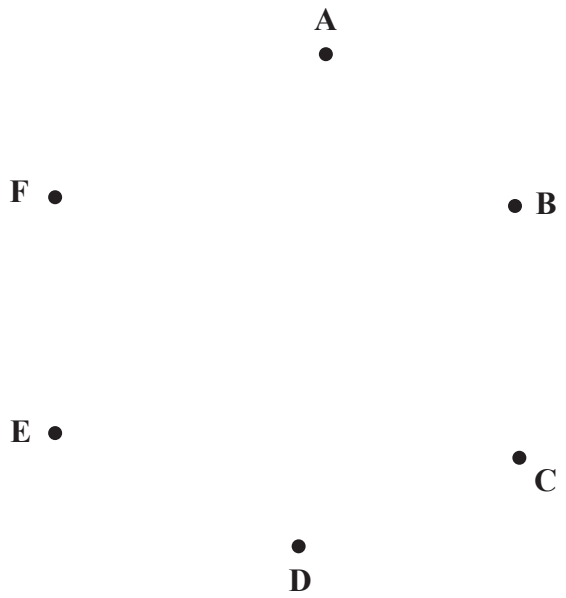


Diagram 1

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

Leave blank

Question 1 continued

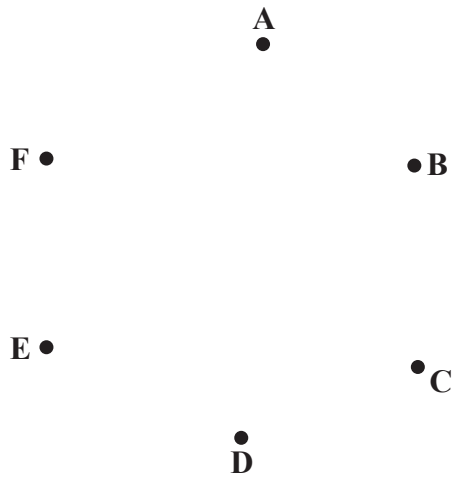


Diagram 2

Weight of minimum spanning tree _____

Q1

(Total 7 marks)