1. The following list of ten numbers is to be sorted into ascending order.

18 13 21 17 23 14 20 15 16 19

(a) Use bubble sort to sort the list into ascending order. You should only show the result of each pass.

(3)

(b)

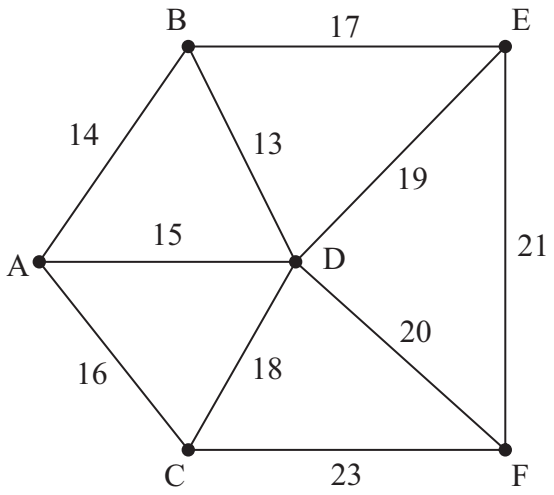


Figure 1

The list of ten numbers in part (a) represents the lengths of cables, in metres, that connect six workstations, as shown in Figure 1.

The workstations must be connected using the minimum amount of cabling.

(i) Use Kruskal's algorithm to find the minimum spanning tree for the network. You must clearly show the order in which the arcs are selected.

(ii) State the weight of the minimum spanning tree.

(4)

(Total for Question 1 is 7 marks)