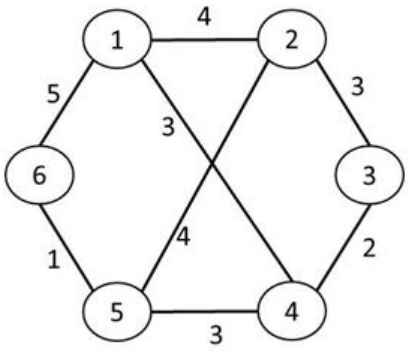
Started on	Thursday, 25 July 2024, 12:48 PM
State	Finished
Completed on	Thursday, 25 July 2024, 1:23 PM
Time taken	35 mins 13 secs
Marks	6.00/6.00
Grade	**100.00** out of 100.00

Question 1

Correct

Mark 1.00 out of 1.00

Using Prim's Algorithm, determine the minimum spanning tree of the following graph. When you have identified the MST, add together the path weights and submit as your answer.



Please enter a **numerical** answer only; do not enter any letters or words.

Answer: 12 ✔

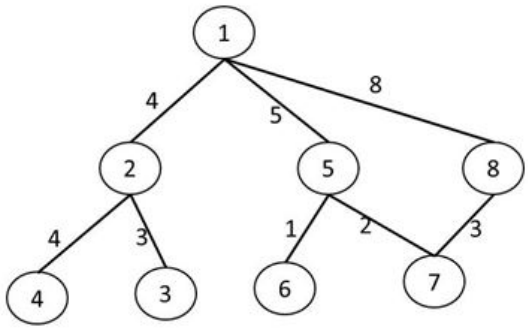
The correct answer is: 12

Question 2

Correct

Mark 1.00 out of 1.00

Using Prim's Algorithm, determine the minimum spanning tree of the following graph.



Which edge, written in the format of: (startnode, endnode), is NOT included in the minimum spanning tree?

Please enter your answer in the following format: (#,#)

Answer: (1,8) ✔

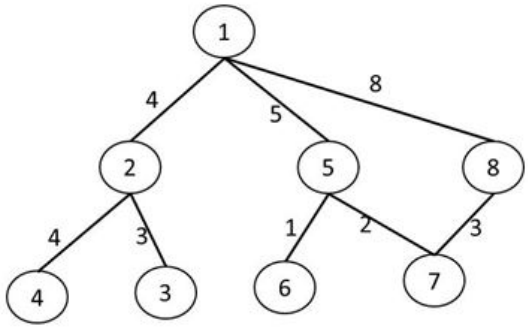
The correct answer is: (1, 8)

Question 3

Correct

Mark 1.00 out of 1.00

Using Prim's Algorithm, determine the minimum spanning tree of the following graph.



What is the weight of the minimum spanning tree (the sum of the weights of the edges included in the minimum spanning tree)?

Please enter a **numerical** answer only; do not enter any letters or words.

Answer: 22 ✔

The correct answer is: 22

Information

For the following questions, please read this problem statement:

A computer manufacturer must determine what product mix to produce. A server requires 4 CPU's and 8 Memory modules. A desktop computer requires 1 CPU and 4 Memory modules. Each server is sold for $1850 and each desktop is sold for $925. The manufacturer must produce a quantity of both units to keep both lines in production so the quantity of servers and desktops produced must both be greater than 0.

The manufacturer can only get a supply of 1250 CPU's and 3800 memory modules due to shortages in the supply chain. Using the Simplex algorithm, determine the number of servers and desktops that should be built to maximize the profits of the manufacturer and determine how much revenue will be generated.

Please enter a **numerical** answer only; do not enter any letters or words. If the answer is a dollar amount, please enter in the following format: $#,###

Question 4

Correct

Mark 1.00 out of 1.00

How many servers should be built?

Answer: 150 ✔

The correct answer is: 150

Question 5

Correct

Mark 1.00 out of 1.00

How many Desktop computers should be built?

Answer: 650 ✔

The correct answer is: 650

Question 6

Correct

Mark 1.00 out of 1.00

How much Revenue (money in dollars received by selling the desktops and servers) will be generated?

Answer: $878,750

The correct answer is: $878,750.00