Questions are for both separate science and combined science students

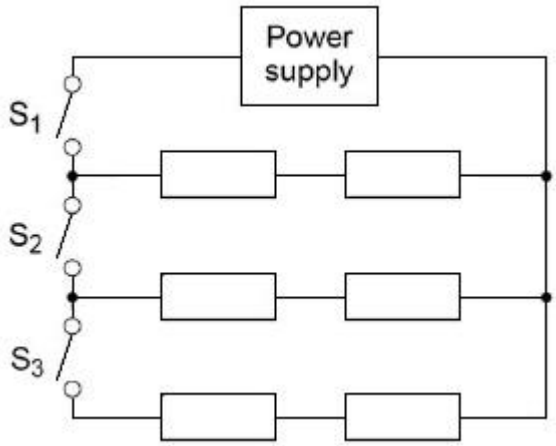
Q1.

Figure 2 shows the circuit diagram for the hair straighteners.

Each resistor represents a heating element.

The power output of the hair straighteners can be changed by closing different switches.

Figure 2



(a) Why do the hair straighteners **not** turn on when only switch S_2 is closed?

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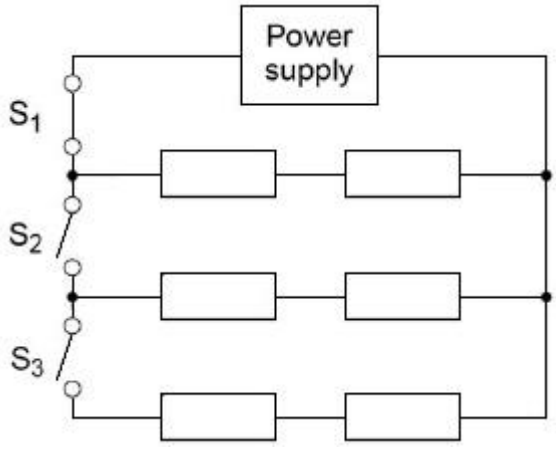
(1)

(b) **Figure 3** shows the hair straighteners circuit with switch S_1 closed.

Figure 3



Switch S_2 and switch S_3 are then closed at the same time.

Explain what happens to the power output of the power supply.

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(3)

(Total 4 marks)