

7 (a) Fig. 7.1 shows a sketch of the current–voltage graph for an electrical component.

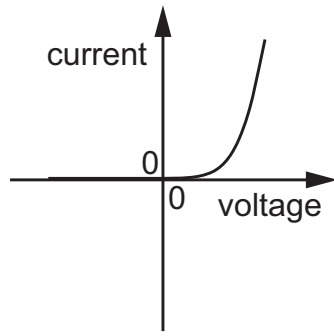


Fig. 7.1

(i) Name the electrical component.

Explain how you identified the component from the graph in Fig. 7.1.

name .....

explanation .....

..... [2]

(ii) Draw the circuit symbol for this component.

[1]

(b) Fig. 7.2 shows an electric circuit for two identical electric heaters, A and B, connected to a mains supply of 230 V.

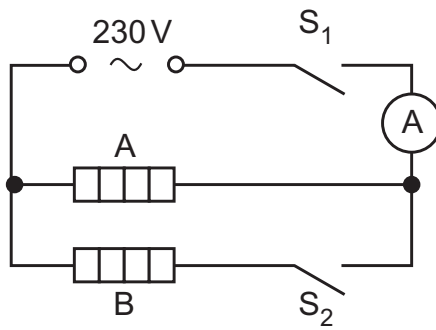


Fig. 7.2

$S_1$  is closed.  $S_2$  is open. The reading on the ammeter is 3.9 A.

(i) Calculate the resistance of heater A.

resistance = ..... [2]

(ii) Calculate the energy transferred by heater A in 5.0 minutes.

energy = ..... [3]

(iii)  $S_1$  remains closed and  $S_2$  is closed.

Determine the reading on the ammeter. Show your working.

ammeter reading = ..... [2]

[Total: 10]