5 A student sets up a circuit to investigate how the current in different components varies with voltage.

He investigates these components.

- a short thick copper wire
- a filament lamp
- a long thin copper wire
- a diode

(a) State four other pieces of equipment the student needs.

(4)

1 .....

2 .....

3 .....

4 .....

(b) During the investigation, the student keeps the two copper wires at a constant temperature.

(i) Give a reason why he should keep the wires at a constant temperature.

(1)

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(ii) Describe how he could keep the wires at a constant temperature.

(2)

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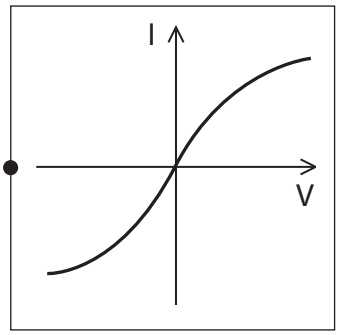
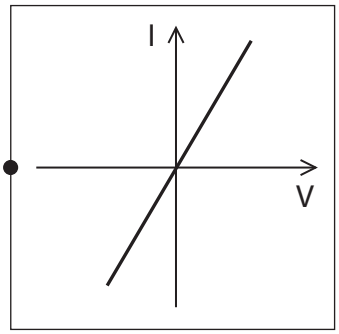
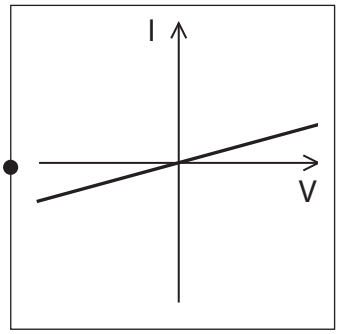
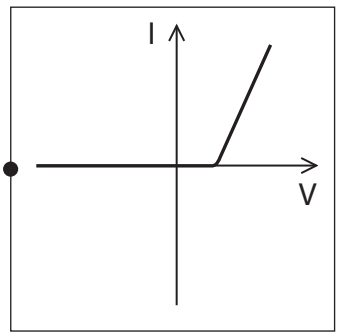
(c) The student obtains a graph for each component.

Draw a straight line linking each component to its correct graph.

(3)

component	**graph**
short thick copper wire	
filament lamp	
long thin copper wire	
diode	

(Total for Question 5 = 10 marks)