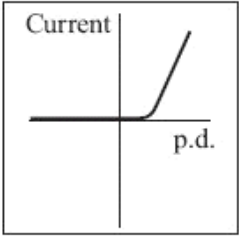
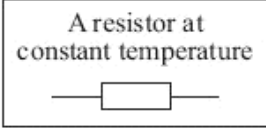
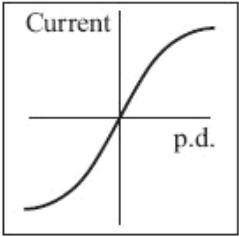
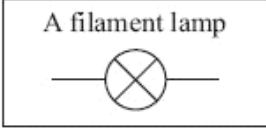
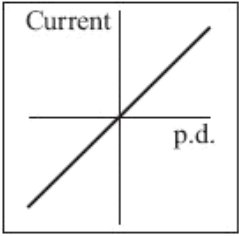
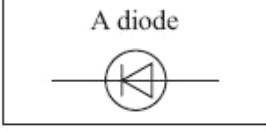


# Electricity – GCSE Questions

Name .....

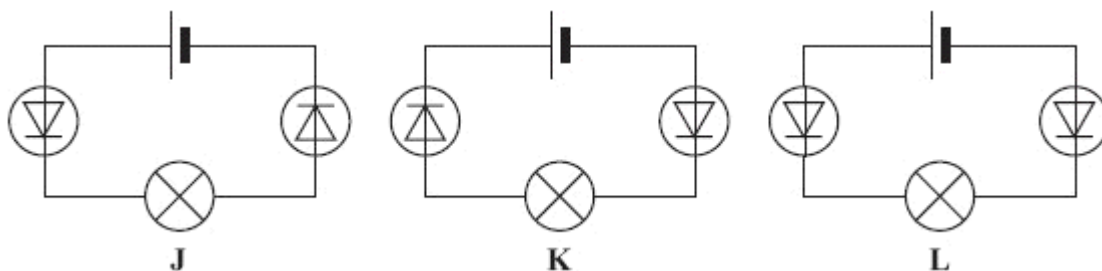
1. (a) The graphs, **A**, **B** and **C**, show how the current through a component varies with the potential difference (p.d.) across the component.

Draw a line to link each graph to the correct component.  
Draw only **three** lines.

	<b>Component</b>
<p><b>A</b></p> 	<p>A resistor at constant temperature</p> 
<p><b>B</b></p> 	<p>A filament lamp</p> 
<p><b>C</b></p> 	<p>A diode</p> 

(2)

- (b) Each of the circuits, **J**, **K** and **L**, include two diodes.

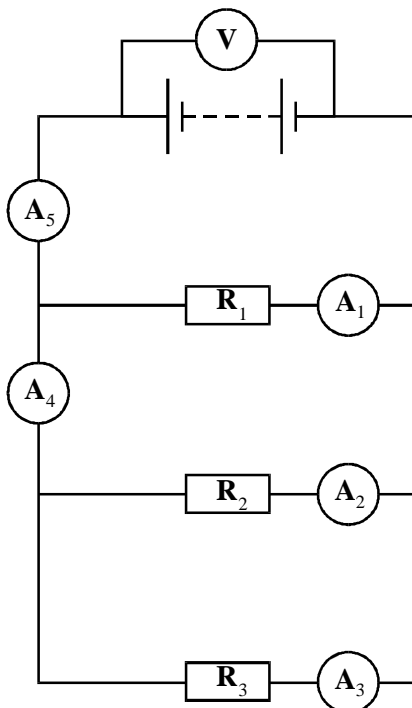


In which **one** of the circuits, **J**, **K** or **L**, would the filament lamp be on?

.....

(1)  
(Total 3 marks)

2. A circuit was set up as shown in the diagram.



(a) The table gives the current through three of the ammeters. Complete the table to show the current through the other two ammeters.

Ammeter	Reading on ammeter in amps
$A_1$	0.2
$A_2$	0.6
$A_3$	0.3
$A_4$	
$A_5$	

(2)

(b) The reading on the voltmeter is 12 V.

What is the resistance of  $R_2$ ?

Show your working and include the correct unit.

.....  
 .....  
 .....

Resistance = .....

(3)

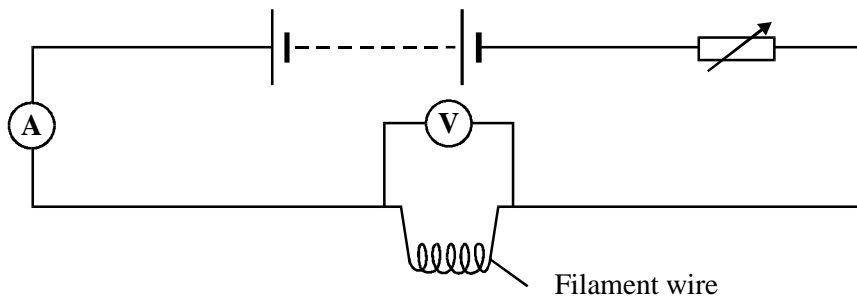
- (c) In the circuit above, the resistor  $R_2$  burned out and current stopped flowing in it. There was no other change to the circuit.

Complete the table below to show the readings on the ammeters after this took place.

Ammeter	Reading on ammeter in amps
$A_1$	0.2
$A_2$	0.0
$A_3$	
$A_4$	
$A_5$	

(3)  
(Total 8 marks)

3. A bulb heats up when an electric current passes through the filament wire. The current was measured when different voltages were applied across the filament wire shown in the diagram below.



- (a) (i) Look at the circuit diagram. How was the voltage changed?

.....  
.....

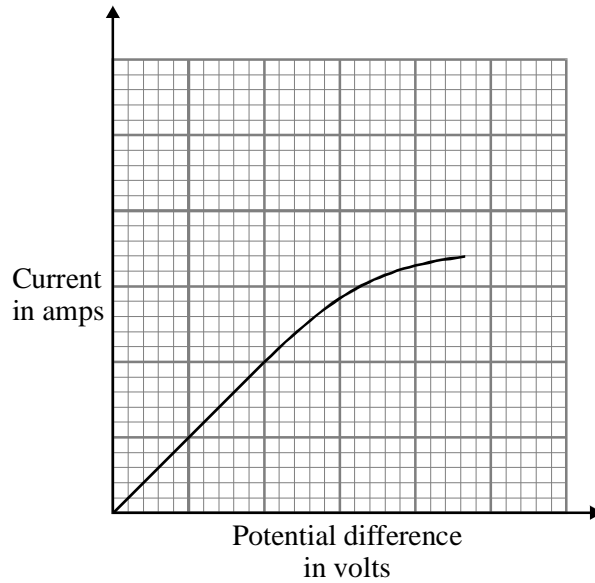
(1)

- (ii) Write an equation that shows the relationship between *current*, *potential difference* and *resistance*.

.....

(1)

- (b) The graph shows how the current through the filament wire changed as the potential difference across it changed.



- (i) Describe the effect of increasing the potential difference on the current flowing through the filament wire.

.....  
.....  
.....

(2)

(ii) Explain this effect in terms of the resistance of the filament wire.

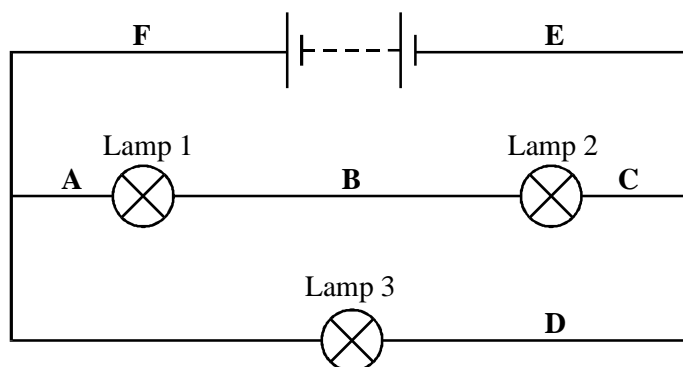
.....

.....

.....

(2)  
(Total 6 marks)

4. The circuit contains three identical lamps.



(a) Complete each of the sentences about the circuit, using one of the phrases in the box.

more than	less than	the same as
-----------	-----------	-------------

(i) The current at **A** is ..... the current at **B**. (1)

(ii) The current at **A** is ..... the current at **D**. (1)

(iii) The current at **F** is ..... the current at **E**. (1)

(iv) The current at **F** is ..... the current at **D**. (1)

(b) In the circuit, which lamp is brightest?.....

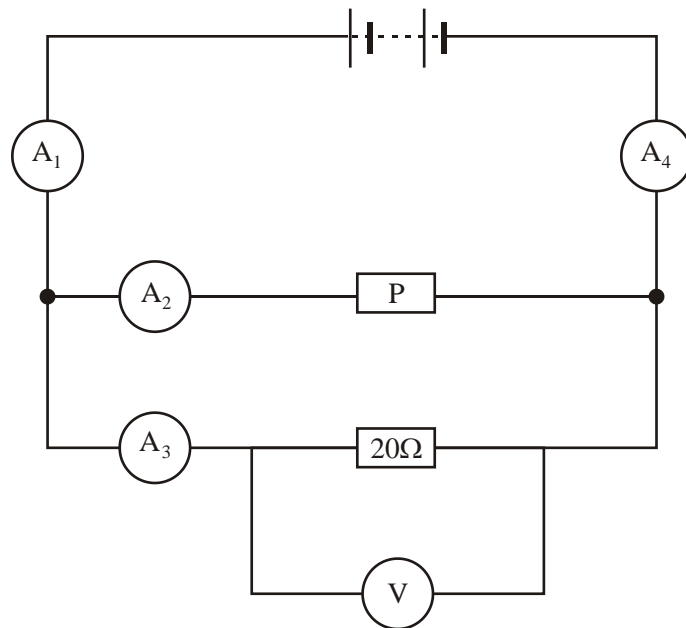
Give a reason for your answer.

.....  
 .....

(2)

(Total 6 marks)

5. The circuit shown has four identical ammeters.



(a) The table gives the current through two of the ammeters.

(i) Complete the table to show the current through the other two ammeters.

Ammeter	Reading on ammeter in amps
A <sub>1</sub>	
A <sub>2</sub>	0.2
A <sub>3</sub>	0.3
A <sub>4</sub>	

(2)

(ii) Which **one** of the following statements is correct. Tick (✓) the box next to your choice.

The resistance of **P** is more than  $20\ \Omega$ .

The resistance of **P** is equal to  $20\ \Omega$ .

The resistance of **P** is less than  $20\ \Omega$ .

Give a reason for your choice.

.....  
.....  
.....

(2)

(b) (i) Write down the equation that links current, potential difference and resistance.

.....

(1)

(ii) Calculate the reading on the voltmeter. Show clearly how you work out your answer.

.....  
.....

Voltmeter reading = ..... volts.

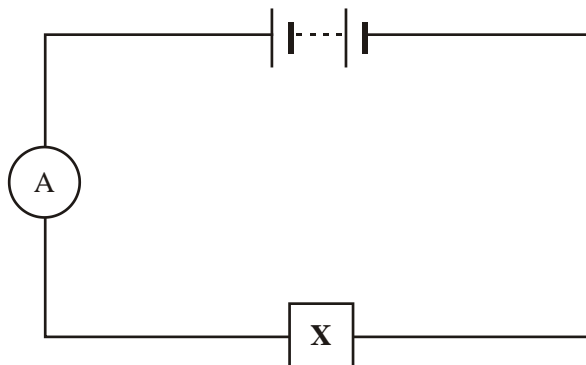
(2)

(iii) State the potential difference of the power supply.

.....

(1)

(c) A second circuit contains an unknown component labelled **X**.



As component **X** is heated, the reading on the ammeter goes up.

What is component **X**?

.....

Give a reason for your answer.

.....

.....

(2)  
(Total 10 marks)