Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic :10_ Electricity And Circuits

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Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Q1.

Complete the sentence by putting a cross (☒) in the box next to your answer.

An electric current is the rate of flow of

(1)

☒ **A** atoms
☒ **B** charge
☒ **C** voltage
☒ **D** watts

Q2.

Figure 7 shows a circuit used to light a lamp.

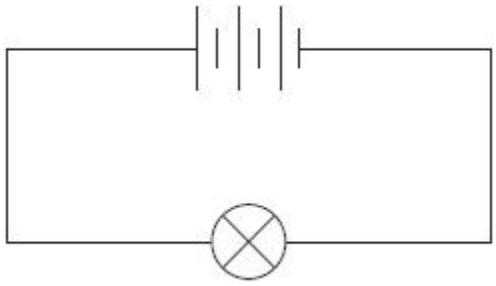


Figure 7

(i) State **two** things you could do to the circuit to make the lamp dimmer.

(2)

1 .....

.....

2 .....

.....

(ii) The energy transferred by the lamp in 20 s is 18 J.

Calculate the power of the lamp.
State the unit.

(4)

power of the lamp = ...

unit = ...

(iii) The potential difference across the lamp is 4.2 V.

The current in the lamp is then 0.19 A.
Calculate the resistance of the lamp.

(3)

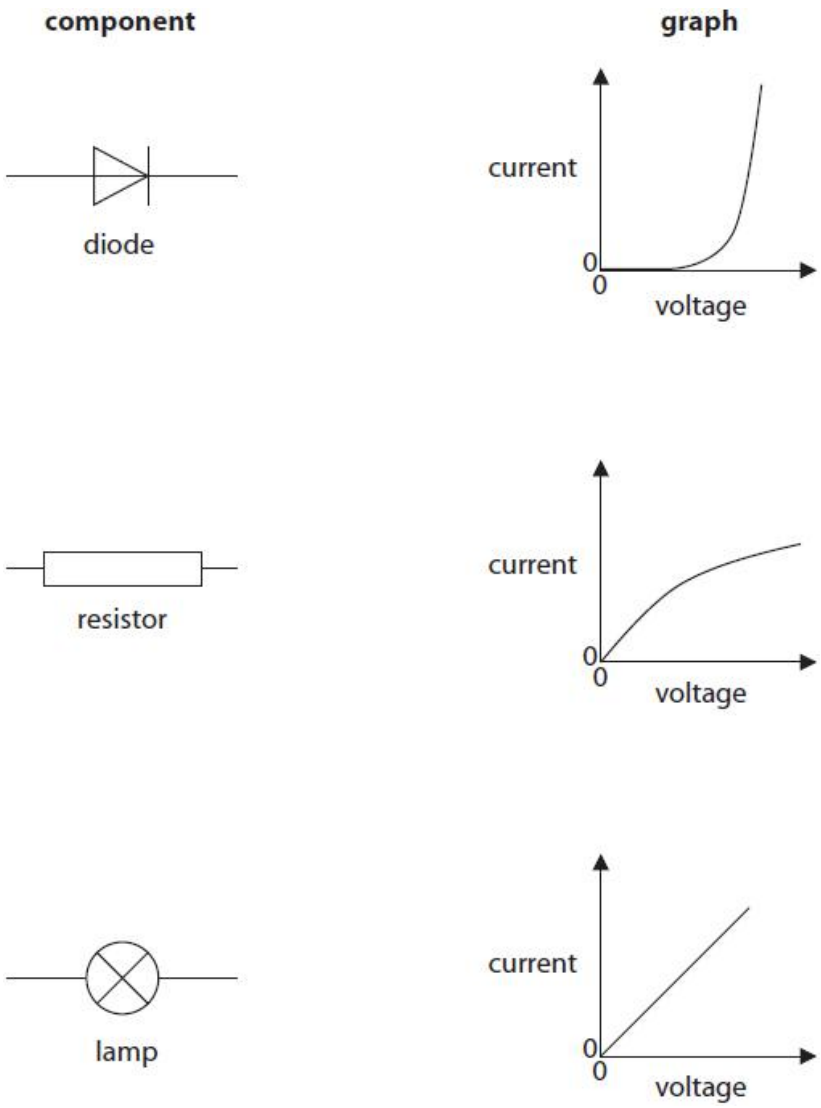
resistance of the lamp = ... Ω

(Total for question = 9 marks)

Q3.

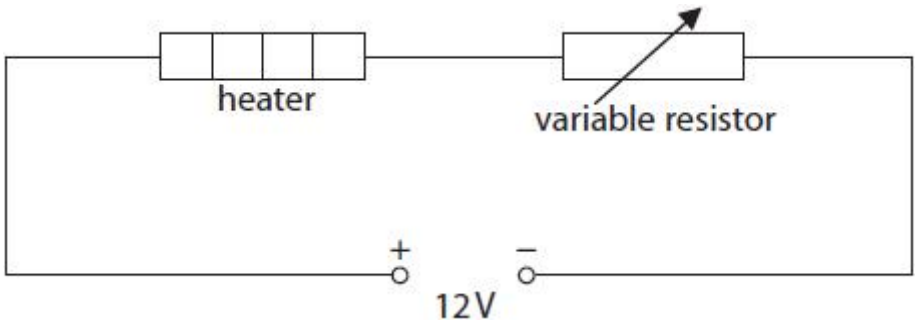
The graphs show how the current in a component changes with the voltage applied across the component.
Draw a line from each component to its correct graph.

(2)



Q4.

A technician investigates the potential difference (voltage) across an electrical heater.
This circuit diagram shows the circuit the technician uses.



(i) Add a voltmeter to the circuit which will measure the potential difference (voltage) across the heater.

(2)

(ii) The resistance of the heater is 15 Ω.

The current in the heater is 0.56 A.
Calculate the potential difference (voltage) across the heater.

(2)

potential difference = ... V

(iii) The technician changes the value of the variable resistor.

She measures the new voltage across the heater and the new current in it.
Here are her results:

voltage = 6.0 V current = 0.40 A.

Calculate the amount of electrical energy transferred in 30 s by the heater.

(2)

energy transferred = ... J

(iv) The total energy supplied by the battery in 30 s is 144 J.

Explain why your answer in (iii) is not the same as the total energy supplied by the battery.

(2)

.....

.....

.....

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