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

Name of the Student:_____
Max. Marks : 15 Marks **Time : 15 Minutes**

Q1.

A LED lamp has a power rating of 3 W.
The voltage across the lamp is 12 V.
Calculate the current in the lamp.

(3)

current in the lamp =.....A

Q2.

A lamp is connected to a potential difference of 0.24 V.

The current in the lamp is 0.12 A.

(i) Calculate the power of the lamp.

Use the equation
$P = I \times V$

(2)

power of the lamp = ... W

(ii) The potential difference is changed to 0.30 V.

The current in the lamp is now 0.13 A.
The lamp is switched on for 35 s.
Calculate the energy that is transferred in this time.
Select an equation from the list of equations at the end of this paper.

(2)

energy transferred = ... J

(iii) The current in the lamp stays at 0.13 A.

Calculate the charge that flows through the lamp in 35 s.
Use the equation
$Q = I \times t$

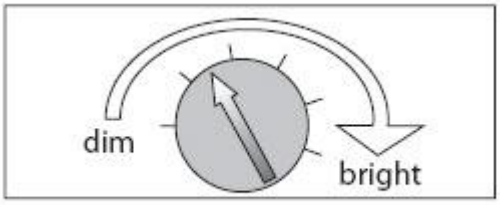
(2)

charge = ... C

(Total for question = 6 marks)

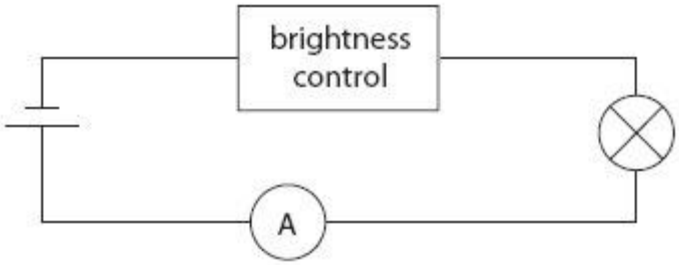
Q3.

An inventor is designing a battery-powered torch.
She wants the torch to have a brightness control.



brightness control

She builds this circuit to test the lamp in the torch.



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

(1)

(ii) $R = \frac{V}{I}$

She sets the control at the "bright" position.

The current is 0.26 A and the potential difference (voltage) across the lamp is 6.0 V.

Calculate the resistance of the lamp.

(2)

.....

Q4.

Figure 1 shows the inside of a mains plug.

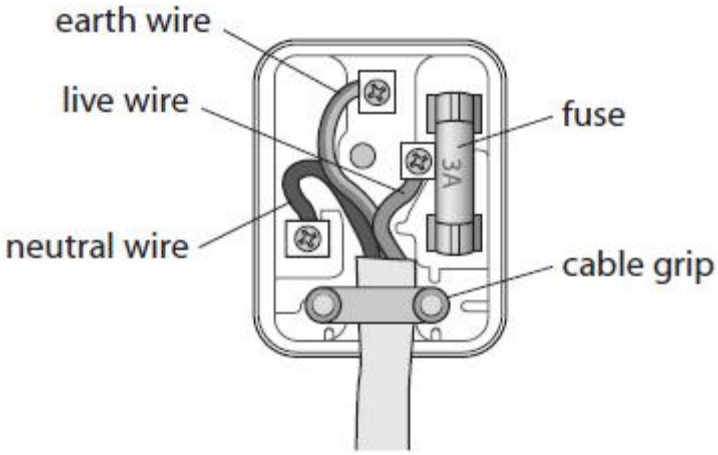


Figure 1

The mains plug has three safety features.

One of these safety features has been ticked in the table.

Put **two** more ticks in the table to show the other two safety features.

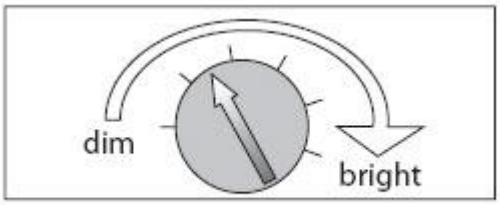
(2)

part of plug	safety feature
cable grip	✓
earth wire	
fuse	
live wire	
neutral wire	

(Total for question = 2 marks)

Q5.

An inventor is designing a battery-powered torch.
She wants the torch to have a brightness control.



brightness control

Which of these could she use in this control?

Put a cross (☒) in the box next to your answer.

(1)

- ☒ **A** a diode
- ☒ **B** a light-dependent resistor
- ☒ **C** a thermistor
- ☒ **D** a variable resistor