

S2 Science
Physics
Electricity and Electronics
Homework

SCN 3-09a

SCN 3-10a

SCN 4-09b

SCN 4-10c

CfE

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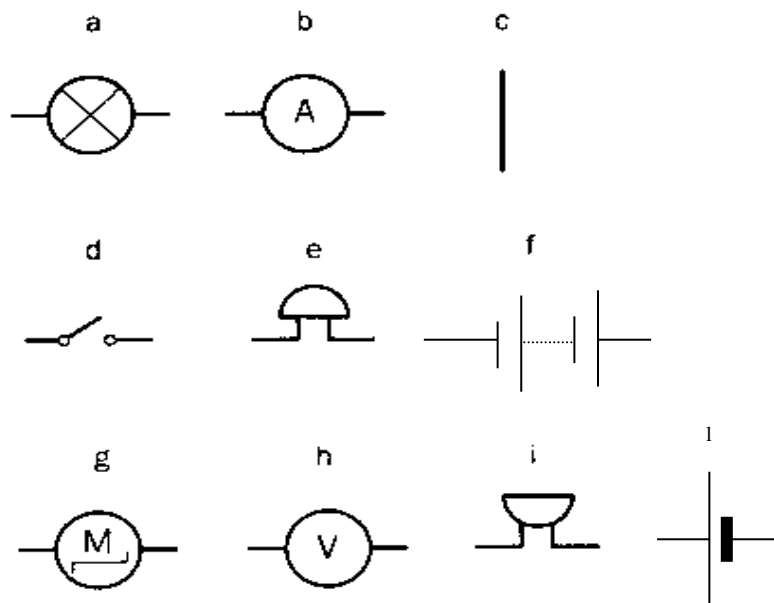
Electricity and Electronics
Homework One

1. Explain what is meant by
 - i) a conductor (1)
 - ii) an insulator? (1)
2. All metals are good conductors because their electrons can move easily through the metal.
What do you think will be true about electrons in an insulator? (1)
3. Give two examples of good conductors of electricity. (1)
4. Give two examples of insulators. (1)
5. The diagram shows some symbols used in circuit diagrams.

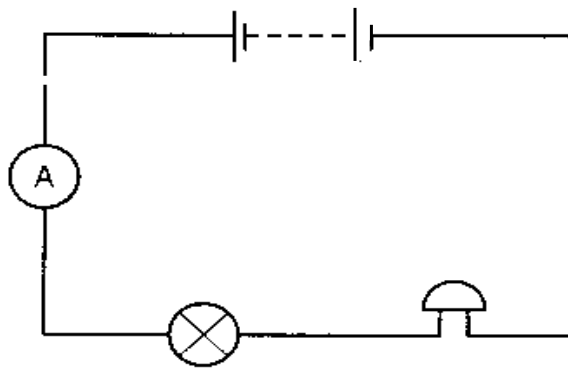
Match each symbol to one of the following:

battery (one cell); wire; lamp; switch; motor; bell; buzzer.

(5)



6. a. Draw a circuit diagram of a battery, two lamps, and an ammeter in series. (1)
- b. Label the positive and negative side of the battery. (1)
- c. One of the lamps blows. (1)
- i. What will be the reading on the ammeter? (1)
- ii Explain why this happens. (1)
7. The circuit diagram shows a battery, a lamp, a bell, and an ammeter connected in series.

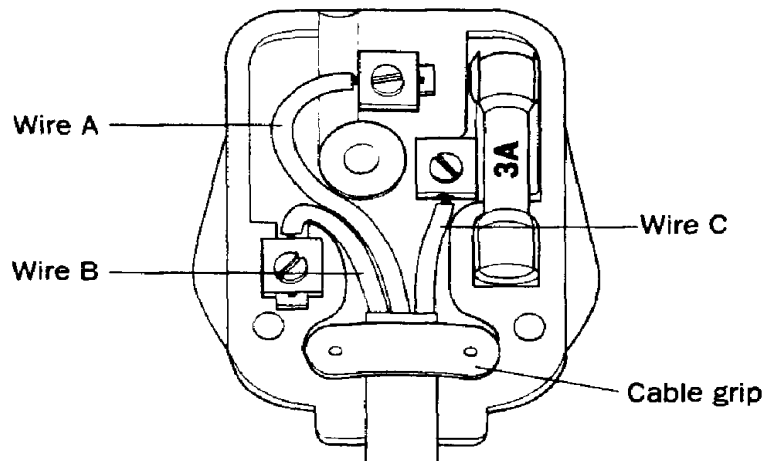


- The ammeter reading is 0.4 A (1)
- a What current goes into the lamp? (1)
- b What current goes into the bell? (1)
- c Another lamp is connected in series with the bell and the lamp.
- i) What happens to the brightness of the first lamp? (2)
- Explain why this happens.
- ii) What happens to the current in the circuit? (2)
- Explain why this happens.

Electricity and Electronics
Homework Two

1. Using the following word bank, copy and complete the table for a plug in your jotter..

Live Wire, Neutral Wire, Earth Wire, Blue, Green and Yellow, Brown.



Wire	Name	Colour
A		
B		
C		

(3)

2. (a) Draw the circuit symbol for a fuse (1)
- (b) Describe what a fuse is and what it does (2)
- (c) Why is it dangerous to replace fuse wire with a nail (2)

3. Copy and complete the following sentence in your jotter :-

The resistance of a wire can be altered by changing its _____ or its _____.

A long wire has _____ resistance than a short wire.

A thick wire has a _____ resistance than a thin wire

4. Copy and Complete the following table for electronic input devices, in your jotter.

<i>Input Device Name</i>	<i>Input Energy</i>	<i>Output Energy</i>
Microphone		
Thermistor		
Light Dependant Resistor		
Switch		

(4)

5. Copy and Complete the following table for electronic output devices, in your jotter.

<i>Output Device Name</i>	<i>Input Energy</i>	<i>Output Energy</i>
Loudspeaker		
Buzzer		
Lamp		
LED		

(4)

(20)