

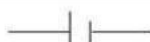
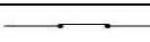
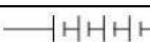
CHAPTER 07

ELECTRICITY

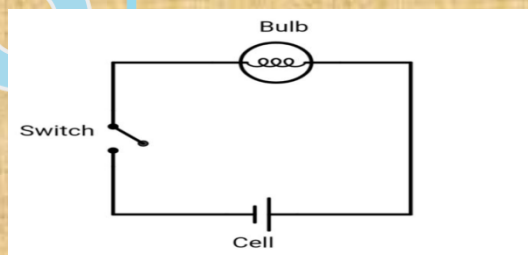
Textbook exercises

1) Draw the symbols of the following electric components

- a) Cell b) Battery c) Switch d) Electric bulb

Switch in the 'OFF' position	
Bulb	
Cell	
Switch in the 'ON' position	
Battery	

2) Draw an electric circuit diagram consisting of a cell, a bulb and an electric switch.



3) In a series connection of bulbs, if one bulb fail, why do all other bulbs go OFF?

Ans.

In series connections current flows in single path without any line distribution. If one bulb fails in a series connections the power to other bulbs will go off.

- 4) Write the difference between series connection and parallel connection. What is the advantage of Miniature Circuit Breaker?

Series circuits	Parallel circuits
All the components arranged in a single line.	All components arranged parallel to each other.
The flow of current is same throughout all the components in the circuit.	There are two or more paths for the current to flow.
If fault occurs at one point the total circuit will break	If any one component damaged the current, flow does not stop and continues to flow through other components.

- 5) What is the advantage of Miniature Circuit Breaker?

Ans.

The advantage MCBs have over fuses is that they can be reset (manually or automatically) to restore normal operation, whereas fuses need to be replaced after every single operation.

- 6) Fill in the blanks.

- a. Longer line in the symbol for a cell represents its _____ terminal.

Ans. Positive (+)

- b. Smaller line in the symbol for a cell represents its _____ terminal.

Ans. Negative (-)

c. The combination of two or more cells is called a _____.

Ans. Battery

d. Safety device used in electric circuit is _____.

Ans. Fuse

e. The device used to close or open an electric circuit is _____.

Ans. Switch

7) Mark 'T' if the statement is true and 'F' if it is false. Give reasons for choice of answer.

a. In series circuit the electricity has only one path (T/F).

Ans. T

Reason: In series circuits components are connected by single path through which current flows.

b. In parallel circuit the electricity has more than one path (T/F).

Ans. T

Reason: In parallel circuits there are two or more paths for current to flow and components are arranged parallel to each other.

c. To make a battery of two cells, the negative terminal of one cell connected to the negative terminal of the other cell (T/F).

Ans. F

Reason: the positive terminal of one cell and negative terminal of another cell connected to form a battery.

d. When the electric current through the fuse exceeds a certain limit, the fuse wire melts and breaks (T/F).

Ans. T

Reason: fuse is a safety device. When the electric current exceeds the fuse wire melts and breaks the circuit. It stops damage to appliances and possible fires.

e. The switch used to close or open an electric circuit (T/F).

Ans: T

Reason: the switch is a device used to close or open an electric circuit.

8) Choose correct answer.

i. Arun buys four bulbs of 15W, 40W, 60W and 100W respectively, Which one should be use in his room as a night bulb.

a) 15 W b) 40W c) 60W d) 100 W

Ans. a) 15 W

ii. Device used to close or open an electric circuit is () a)
Electric bulb

b) Battery

c) Switch

d) Fuse

Ans. c) Switch

iii. Which one of the following is used as a for light source. a)

Cassette player

b) Electric mixer

c) Rice Cocker

d) Table lamp

Ans. d) Table lamp

iv. Safety device used in electric circuit is

a) Electric bulb

b) Battery

c) Switch

d) Fuse

Ans. d) Fuse

- 9) Visit your classmate houses. Find out the meter readings of three months. Record your observations. Ask your parents, about how electricity bill is paid?

Ans. we know 1kw per hour is 1 unit

Before three months the meter reading is 6222

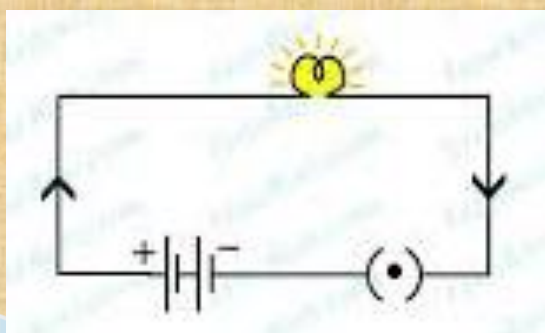
After three months the meter reading is 6999

The rate of 1 unit in their area is 3/-.

In three months the electricity used = $6999 - 6222 = 777$ units.

The amount = cost of unit number of units 3 $777 = 2,331/-$

10) Draw the circuit diagram for the following series connection



11. Match the following.

- | | | |
|------------------------------|-----|---|
| 1. Cell | (e) | a) Used to open or close a circuit |
| 2. Switch | (a) | b) Safety device used in electric circuit. |
| 3. Circuit | (c) | c) A complete path for the flow of an electric current |
| 4. Miniature Circuit Breaker | (d) | d) Reset by hand, circuit becomes complete once again. |
| 5. Fuse | (b) | e) A device which converts chemical energy into electrical energy |