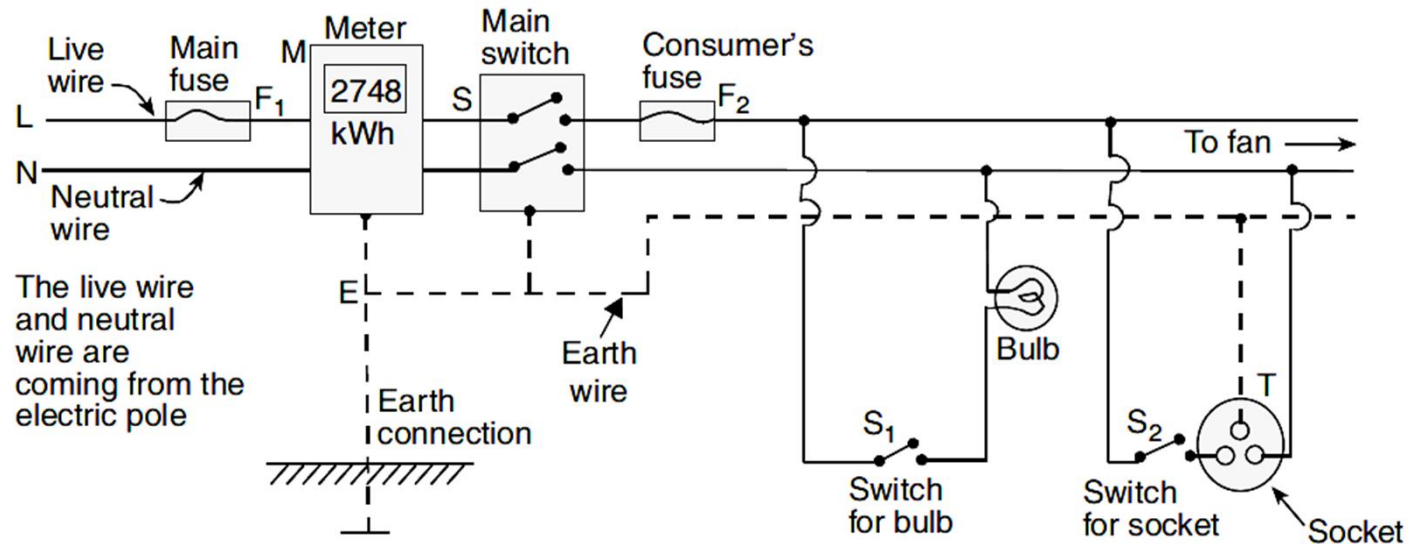


CASE STUDY QUESTION 14

Read the following and answer any four questions from (i) to (v)

In household electric circuits, the mains supply is delivered to our homes using three core cable as shown here. The cable consists of three wires, live wire, neutral wire and earth wire. The live wire is at potential difference of 220 V for the domestic supply and the potential difference between live and neutral wire is 220 volts. The live wire is connected to electric meter through a fuse or a circuit breaker of higher rating. The neutral wire is connected directly to the electric meter.



(i) Potential difference between live and neutral wire is

- (a) 1000 V (b) 100 V (c) 500 V (d) 220 V

Ans: (d) 220 V

The potential difference between live and neutral wire is 220 Volts.

(ii) Switches are connected in household circuit with which wire?

- (a) Earth wire (b) Neutral wire (c) Live wire (d) None of these

Ans: (c) Live wire

Switches are connected in the live wire because when the switch is in the off position, no part of the connected electrical appliance will be at higher potential (220 V).

(iii) What is usual current rating of the fuse wire in the line if electric iron, geysers, room heater etc. are in use?

(a) 15 A

(b) 5 A

(c) 10 A

(d) 25 A

Ans: (a) 15 A

A fuse of rating 15 A is usually used for appliance electric iron, geysers and room heater etc.

(iv) For all electrical appliances which property of circuit is recommended?

(a) Earthing

(b) Neutralising

(c) Connecting with fuse

(d) None of these

Ans: (a) Earthing

The earthing of any electrical appliance is done to protect the user from any accidental electrical shock due to leakage of current.

(v) Home circuit is connected in parallel because

(a) in parallel circuit resistance is maximum

(b) in parallel circuit if one device is damaged, then it does not affect other devices

(c) both of these

(d) none of these.

Ans: (b) in parallel circuit if one device is damaged, then it does not affect other devices