

PHYSICS - X-PART-6 CLASS 06



Heating Effect of Electricity- Uses

- * Name the part in which electrical energy changes into heat energy.
 - Heating coils
- * Which material is used to make this part?
 - Nichrome (Nichrome is an alloy of nickel, chromium and iron)
- * What are the peculiarities of such substances?
 - High resistivity
 - Ability to remain in red hot condition for a long time without getting oxidised
 - High melting point

Safety fuse



Safety fuse is a device that works on the heating effect of electric current.

- * Write the function of a safety fuse in an electric circuit.
 - Safety fuse is a device which protects us and the appliances from danger when an excess current flows through the circuit.
- * Which material is used to make fuse wire?
 - Fuse wire, an alloy of tin and lead,
- * What are the peculiarities of fuse wire?
 - low melting point.
- * Which are the circumstances that cause high electric current, leading to the melting of fuse wire?
 - Short Circuit and Overloading
- * How is the fuse wire connected to a circuit?
 - In series.

Short Circuit

If the positive and the negative terminals of a battery or the two wires from the mains come into contact without the presence of a resistance in between, they are said to be short-circuited.

Overloading

A circuit is said to be overloaded if the total power of all the appliances connected to it is more than what the circuit can withstand.

Amperage

Amperage (A) is the ratio of the power of an equipment to the voltage applied. Amperage increases with the thickness of the conductor.

$$\text{Amperage} = \text{Power} / \text{Voltage}$$

* When a fuse wire is included in a household wiring, what are the precautions to be taken?

- The ends of the fuse wire must be connected firmly at appropriate points.
- The fuse wire should not project out of the carrier base.
- A fuse wire of suitable amperage should be used.

Assignment

1. Find and write down the equipment used in the cartridge fuses and their amperage