Physics - 12th Class Physics Chapter 2 Short Questions Preparation

Q1. State Ohm's law and write its formula.

Ans 1: It states that "the current flowing through a conductor is directly proportional to the applied potential difference provided that the physical state remains same"
V=IR
Resistance: The opposition against the flow of current is known as resistance.The SI unit of resistance is Ohm
R=V/I

Q2. What does the equation $H=I^2Rt$ show?

Ans 1: This equation show the heating effect,During their motion free electrons collide frequently with the atom of metal.on each collision they transfer some of their kinetic energy to the atom with which they collide.And these collisions produce heating effect in the wire.

Q3. What is the effect on drift velocity of free electrons by increasing potential difference?

Ans 1: By an increase in potential difference,drift velocity also increase.Because by increasing potential difference ,the current also increase .

Q4. Why potential meter is accurate measuring meter?

Ans 1: The voltage measured using potentiometer is the voltage across the terminal of the cell when current is not following through it.This voltage is exactly the emf of the cell.Further the accuracy of a potentiometer can be increased to a great extent by increasing the length of the "potentiometer wire".

Q5. Differentiate between resistance and resistivity.Give their unit.

Ans 1: Resistance: The opposition against the flow of current is known as resistance,The SI unit of resistance is Ohm.
R=V/I

Ans 2: Resistivity:The resistance of a meter cube of a material is called resistivity.Its unit is known as ohm-meter.

Q6. Does the bends in wire effect its electrical resistance?

Ans 1: No bend in wire do not affect its electrical resistance.

Q7. What is meant by Tolerance? Also give one example.

Ans 1: Tolerance mean the possible variation in the value of resistance of a carbon resistors from a marked value.In case of silver and gold ban its value is +-10% and +-5% .

Q8. Briefly describe the current through a metallic conductor and drift velocity.

Ans 1: In a metallic conductor,free electron are in random motion with the speed of several hundred km/s at the room temperature.If the ends of the wire are connected to the battery the free electrons are experience a force and directed to move in the electric field direction.The accelerating electrons keep on colliding with atoms of the conductors and transfer their energy to the lattice with the result that the electrons acquire an average velocity called drift velocity.The drift velocity is of the order of 10^{-3}.A steady current is establish in the wire.

Q9. State Ohm's law and basic principle of electroplating.

Ans 1: Current passing through a wire is directly proportional to the potential difference applied across its ends provided that the physical state conductors remains same.
Basic principle of electroplating is a process of coating a thin layer of sum expensive metal of (gold,silver etc) on a article of some cheap metal.

Q10. Write about any two sources of Current.

Ans 1:

1. Electric generators convert mechanical energy into the electrical energy.
2. Solar cells convert sunlight directly into electrical energy.
3. Thermocouples convert heat energy into electrical energy.
