Physics - ICS Part 2 Physics Chapter 13 Short Questions Preparation

Q1. What are the difficulties in testing weather the filament of lighted bulb obeys ohm's law?

Ans 1: In case of light bulb,the temperature of the filament increase with the passage of current through it.Hence the Ohms law can't be applied to filament bulb.

Q2. 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.

Q3. What is meant by tolerance?

Ans 1: Tolerance means the possible variation from the marked value.

Q4. What is the conventional current? How does it differs from electric current?

Ans 1: The current flow due to positive charges from a point at higher potential to a point at lower potential is called conventional current.It is due to positive charges while electric current is due to negative charges i.e electrons.

Q5. 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 .

Q6. 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.

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. What are non ohmic devices?Give two examples.

Ans 1: Those devices which don't obey the Ohm's law are called non-ohmic devices.Their current-voltage graphic is not a straight line.For example ,filament bulb and semiconductor diodes.

Q9. 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.

Q10. What is wheat stone bridge?

Ans 1: It is an electrical circuit which can be used to find the unknown resistance of a wire.It consists of four resistance connected in the form of mesh.galvanometer,battery and switch.