Physics - ICS Part 2 Physics Chapter 13 Short Questions Preparation

Q1. What is short circuit and open circuit mean to you?

Ans 1: when switched is close and current is passing through the circuit,It is called closed circuit and in this situation resistance is zero whereas the circuit is said to be open if it has infinite resistance and no current is passing through it.

Q2. Differentiate between conventional and non-conventional current.

Ans 1: Conventional Current: The current flow die to positive charges from a point at higher potential to a point at lower potential is called conventional current.

Ans 2: Non-Conventional Current: The amount of electric charge that flow through a cross section of a conductor per unit time is known as electric current.It is also known as non-conventional current.

Q3. 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

Q4. Define resistivity and electrolysis.

Ans 1: The resistance of a meter cube of a material is called resistivity.Certain liquids such dilute sulphuric acid or copper sulphate solution conduct electricity due to some chemical reactions that take place within them.The study of this process is known as electrolysis.

Q5. Define temperature coefficient of resistivity.

Ans 1: The temperature of coefficient of resistivity is defined as fractional change in resistivity per kelvin rise in temperature.Its unit is K^{-1}.

Q6. 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.

Q7. What is thermistor? Gives its two applications.

Ans 1: Thermistors are heat sensitive resistors.Thermistors with positive temperature coefficient of resistance as well as negative temperature coefficient of resistance are available.They are used for accurate measuring of temperature up to 10K.They are used as temperature sensors.

Q8. How a wheatstone bridge is used to determine an unknown resistance?

Ans 1: Wheatstone bridge is an especially designed electrically circuit used to calculate the accurate value of any unknown resistance.It consists of four resistance,a galvanometer, a battery and a switch connected.When the switch is closed current pas through the galvanometer and then the three known resistance R_1,$R_2$and $R_3$are adjusted in such a way that galvanometer show no deflection,In this balanced condition the fourth unknown resistance R_4can be calculated by using this relation.$R_1/R_2=R_3/R_4$.

Q9. Do two long and parallel current carrying wires attract each other?

Ans 1: Yes ,If the direction of current is same in two long parallel current carrying wires.Because the opposite pole of electromagnet comes in front of each other and attracts.

Q10. How the heating effects produce when current flows through the conductor?

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