

# Physics - 12th Class Physics Chapter 2 Short Questions Preparation

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**Ans 1:** If the resistance of a substance decrease with an increase in temperature ,then it is termed as negative coefficient of temperature, For example ,silicon and germanium have negative coefficient of temperature.

### Q2. 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  $R_4$  can be calculated by using this relation.  $R_1/R_2 = R_3/R_4$ .

#### Q3. 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.

## Q4. Name any four source of current.

Ans 1: Source of current are

- 1. Cells
- 2. Electric generators
- 3. Thermocouples
- 4. Solar cells

### Q5. Give two substance having negative temperature coefficient. Also define the temperature coefficient.

**Ans 1:** The temperature coefficient of a resistance is defined as fractional change in resistance per kelvin rise in temperature.lts unit is K<sup>-1</sup>.Substance like Ge and Si have negative temperature coefficient.

# Q6. Why does no current pass through Galvanometer in a balanced wheat stone bridge although the keys in the circuit are closed?

**Ans 1:** No current pass through the galvanometer when wheat stone bridge is balanced. Because at this stage ,both the terminals of the galvanometer are at the same potential. Hence no current will flow through it.

# Q7. 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<sup>-3</sup>. A steady current is establish in the wire.

Q8. 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.

Q9. What is meant by tolerance of resistors?

**Ans 1:** Tolerance is the measure of possible variation from the marked value, A gold band has +-5% tolerance, silver has +-10% and no band at all wounf mean a +-20 tolerance.

Q10. 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.