

Physics - 12th Class Physics Chapter 6 Short Questions Preparation

Q1. Define crystal lattice.

Ans 1: The whole structure obtained by the repetition of unit cell is known as crystal lattice.

Q2. What is the difference between intrinsic and extrinsic semiconductors?

Ans 1: Intrinsic Semiconductor: A semiconductor in its extremely pure form is known as Intrinsic semiconductors, Pure elements of silicon and germanium are Intrinsic semiconductors, These semiconductors elements have atoms with four valence electrons.

Ans 2: Extrinsic Semiconductor: The doped semiconductors material are called Extrinsic Semiconductor. The electrical behaviour of semiconductors is substantially changed introducing a small impurity into pure semiconductors, and this process is called doping.

Q3. Define superconductors.

Ans 1: The materials whose resistivity becomes zero below a certain temperature are called superconductors. For example mercury becomes super conductor below 4.2 K temperature.

Q4. What does are of hysteresis loop tell?

Ans 1: The area of the loop is the measure of the energy needed to magnetize and demagnetize the specimen during each cycle of the magnetizing current, This is the energy required to do work against internal friction of the domains. This work is dissipated as heat. It is called hysteresis loss.

Q5. Define coercivity of a material.

Ans 1: To demagnetize the material the magnetizing current is reversed and increased to reduce the magnetization to zero. This is known as coercive current, And this process is called coercivity.

Q6. Distinguished between elasticity and plasticity.

Ans 1: Elasticity: In deformed crystalline solid, the atoms return to their equilibrium position after the removal of external force. This ability of the body to return to its original shape is called elasticity.

Ans 2: Plasticity: If the stress is increased beyond elastic limit, the specimen becomes permanently deformed. This is called plasticity.

Q7. Define young modulus and shear modulus.

Ans 1: The ratio of tensile stress to tensile strain is called young modulus.

Ans 2: The ratio of shear stress to shear strain is called shear modulus.

Q8. Distinguished between soft magnetic material and hard magnetic materials.

Ans 1: Soft magnetic: The materials in which their domains can be easily orientated on applying external magnetic field and also return to original positions when field is removes.E.g iron.

Ans 2: Hard magnetic:The material in which their domains can not easily orientated on applying external magnetic field.But once the domains are lined up by a very strong magnetic field,they will restrain their position after the removal of magnetic field.

Q9. Distinguished between a valence and a conduction band.

Ans 1: Valence bond: The energy band occupied by valence electrons is called the valence band.

Ans 2: Conduction band:The energy band are occupied by free electrons is called the conduction band.

Q10. Distinguished between p-type semiconductor and n-type semiconductor.

Ans 1: p-type semiconductor:When a trivalent impurity such as aluminium is added into the semiconductor,holes are generated and p type semiconductor is formed.Holes are positive charge carrier.

Ans 2: n-type semiconductor: When a pentavalent impurity such as phosphorus is added into the semiconductor,free electrons are generated and n type semiconductor is formed.Charge carriers is in n-type are free electrons.
