

Physics - ICS Part 2 Physics Chapter 17 Short Questions Preparation

Q1. Define stress and strain, What are their units.

Ans 1: The force applied on unit area to produce any change in the shape, volume or length of the body is called stress, its SI units is pascal.
And strain is the measure of deformation of solid when stress is applied to it. It has no unit.

Q2. Distinguished between a valence and a conduction band.

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

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

Q3. Compare the electrical behavior of conductor and semiconductor in terms of energy band theory.

Ans 1: On the basis of energy band theory
In conductors, free electrons are available for conduction, valence and conduction bands largely overlap each other and in semiconductors, valence band and conduction band is partially filled and they have a very narrow forbidden energy gap.

Q4. Explain what is Curie temperature?

Ans 1: The temperature at which the domains of ferromagnetic material start losing their orderliness is called Curie temperature. For example the Curie temperature of iron is 750°C .

Q5. Define UTS of a material.

Ans 1: The maximum stress that a material can withstand is called ultimate tensile stress.

Q6. What does a 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.

Q7. Define polymeric solid with example.

Ans 1: Polymers are solid materials with a structure that is intermediate between order and disorder. They can be classified as partially or poorly crystalline solids. For example plastic, rubber.

Q8. How the conductivity of semiconductor can be raised?

Ans 1: The conductivity of a semiconductor can be raised by the process of doping in which small number of impurity atoms are added to pure semiconductors.

Q9. What are paramagnetic Substance? Give an example

Ans 1: The solid in which the orbital and spin axes of the electrons in an atom are so oriented that their magnetic field support each other are called paramagnetic substance. For example ozone, platinum etc

Q10. Describe energy band picture of insulators.

Ans 1: Insulators are those materials in which valence electron are bound to very tight to their atoms and are not free. In terms of energy bands, it means that an insulator has:

- An empty conduction band
 - A full valence band
 - A large energy gap
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