Physics - ICS Part 2 Physics Chapter 17 Short Questions Preparation

Q1. What is meant by strain energy?How can it be determined from the force extension of graph?

Ans 1: The amount of P.E stored in a material due to displacement of its molecule from its equilibrium position.under the action of stress is called strain energy,Strain energy can be determined from the force extension graph according to the following reasons Strain energy=$1/2L_1F_1$

Q2. Differentiate between amorphous and polymeric solid.

Ans 1: Amorphous solid,any non-crystalline solid in which the atoms and molecules are not organized in a definite lattice pattern,such solid include glass ,plastic and gel.

Ans 2: Polymer are said to be more or less solid materials with a structure that is intermediate between order and disorder.They can be classified as partially or poorly crystalline solids.

Q3. Define yield point and ultimate tensile stress.

Ans 1: Yield point: The point on the stress-strain curve beyond which if stress is further increased then permanent deformation takes place in the given specimen.This is called yield point.
Ultimate tensile stress: The maximum stress that a material can withstand called ultimate tensile stress.

Q4. Write the used of superconductors.

Ans 1: Superconductors can be used in :

1. Magnetic Resonance Imaging
2. Powerful but small electric motors
3. Fast computer chips
4. Magnetic Levitation Trains

Q5. 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

Q6. Define elastic limit and Yield point.

Ans 1: The greatest stress that a material can endure without any permanent deformation is called elastic limit.This kind of behavior is called elasticity.
Yield point: The point on the stress-strain curve beyond which if stress is further increased then permanent deformation takes place in the given specimen.This is called yield point.

Q7. Compare the electrical behavior of conductor and semiconductor in terms of energy band theory.

Ans 1: On the basic 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.

Q8. What is meant by para and ferromagnetic substance?

Ans 1: The orbits and the spin axes of the electrons in an atom are so oriented that their field spot each other and the atom behaves like a tiny magnet.Substance with such atoms are called paramagnetic substance e.g iron.
There are some solid substance in which the atom cooperate with each other in such a way so as to exhibit a strong magnetic field there are called ferromagnetic substance.

Q9. Define retantivity.

Ans 1: When the current is reduced to zero,the material still remains strongly magnetized which is known as retantivity.

Q10. 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

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