# Physics - ICS Part 2 Physics Chapter 17 Short Questions Preparation

Q1. What is the difference between intrinsic and extrinsic semiconductors?

**Ans 1:** Intrinsic Semiconductor:A semiconductor in its extremely pure form is known as Intrinsicsemiconductors,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.

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Q2. 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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Q3. Define volumetric strain.

**Ans 1:** When the applied stress change the volume,then the change in volume per unit volume is called volumetric strain.

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Q4. What is meant by strain energy?

**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<sub>1</sub>F<sub>1</sub>

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Q5. Define coercivity of a material.

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

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Q6. Define stress and write its formula.

**Ans 1:** It is defined as the force applied on unit are to produce any change in shape,volume or length of a body.Its formula is Stress=Force/Area

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Q7. What are glassy solids?Do they possessed property of flow?

**Ans 1:** Amorphous solids are called as glassy solids.Any non-crystalline solid in which the atoms and molecules are not organized in a definite lattice pattern is called glassy solid.NO they do not possess the property of flow.

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Q8. Define cell unit.

**Ans 1:** A crystalline solid consists of three dimensional pattern that repeat itself over and over again,This smallest three dimensional basic structure is called unit cell.

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Q9. Differentiate between tensile stress and shear modes of stress and strain.

**Ans 1:** Tensile Stress: A stress that cause the change in length of an object is called tensile stress.
Shear stress: A stress that cause the change in shape of an object is called shear stress.
Tensile stain:If the strain is due to tensile stress it is called tensile strain.A strain produced in the object when it is subjected to shear stress is called shear strain.

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Q10. 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.

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