

Name:		Roll No.		Subject	Physics
Test Type	MCQs, Short & Long question	Class	12	Date	
Chapter	17 Start to before Intrinsic Semiconductor	Unit	17	Time	

Q. No. 1 Tick the best option

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- Examples of amorphous solids are:
(a) Plastic (b) Zirconia (c) NaCl (d) Wax
- The ratio of volumetric stress to the volumetric strain is called:
(a) Bulk modulus (b) Young modulus (c) Shear modulus (d) Modulus of elasticity
- With rise in temperature, the charge carriers in semiconductor substance:
(a) Increases (b) Decreases (c) Remains constant (d) Increase then decrease
- The dimension of stress is:
(a) $[MLT^{-1}]$ (b) $[ML^{-1}T]$ (c) $[ML^{-1}T^{-1}]$ (d) $[ML^{-1}T^{-2}]$
- At 0K, a piece of semiconductor materials (Si/Ge) are:
(a) Conductor (b) Semiconductor (c) Insulator (d) All of these
- In cubical crystal, all the sides meet at:
(a) acute angle (b) Obtuse angle (c) Right angle (d) 45°
- A good conductors have conductivity of the order of:
(a) $10^{-7} (\Omega m)^{-1}$ (b) $10^7 (\Omega m)^{-1}$ (c) $10^{-2} (\Omega m)^{-1}$ (d) $10^{-2} (\Omega m)^{-1}$
- Ordinary glass on heating gradually softens into a paste like state at almost:
(a) $600^\circ C$ (b) $700^\circ C$ (c) $500^\circ C$ (d) $800^\circ C$
- Natural rubber has the formula:
(a) $(C_2H_4)_n$ (b) $(C_3H_5)_n$ (c) $(C_5H_6)_n$ (d) $(C_4H_6)_n$
- The maximum stress that a material can with stand:
(a) Proportional (b) Plastic stress (c) UTS (d) All
- Tensile strain (ϵ) is:
(a) $\frac{\Delta L}{L}$ (b) $\frac{\Delta V}{V}$ (c) $\frac{\Delta a}{a}$ (d) $\tan \theta$
- The S. I unit of stress is similar to:
(a) Force (b) Energy (c) Momentum (d) Pressure
- Arrangement of molecules in crystalline solids is studied by:
(a) LASER technique (b) γ -ray technique (c) X-ray technique (d) Atomic spectroscopy
- In between two consecutive permissible band there is a:
(a) Conduction band (b) Fermi band (c) Valance band (d) Forbidden band
- The reciprocal of bulk modulus is:
(a) Elasticity (b) Young's modulus (c) Compressibility (d) Shear modulus
- Semi-conductors have conductivities ranging between:
(a) 10^{-4} to $10^{-2} (\Omega m)^{-1}$ (b) 10^{-4} to $10^{-12} (\Omega m)^{-1}$ (c) 10^{-6} to $10^{-4} (\Omega m)^{-1}$ (d) None of these
- Narrow forbidden energy gap between the conduction and valance bands of semi-conductor is of the order of:
(a) 5eV (b) 1eV (c) 50eV (d) 100eV
- Which of the following is most ductile?
(a) Glass (b) Cast iron (c) Copper (d) High carbon steel
- Valance band:
(a) Contains valance electrons (b) Contains no valance electrons
(c) Highest occupied band (d) Lowest occupied band
- Energy band theory is based on:
(a) Wave Mechanical model (b) Quantum model
(c) Wave relativistic model (d) None of these
- Which pair of quantities has same dimensions?
(a) Stress, power (b) Pressure, bulk modulus
(c) Stress, strain (d) Strain, strain energy
- Which statement is correct?
(a) Elasticity is that property of body which enables body to regain its original dimension
(b) Elasticity is that property of body does not allow it to return its original shape
(c) Elasticity is that property of a body that allows it to retain its original shape and dimension after the stress is removed
(d) Elasticity is that property of a body that obeys Hook's law

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Q. No. 2 Write the short answer of these following question

4 x 2 = 08

- 1) What is meant by Polymeric solids? Why they are important?
- 2) What is difference between ductile and brittle substances?
- 3) Distinguish between valance and conduction band.
- 4) Describe energy band picture of semiconductor.

Q. No. 3 Long question

- 1) What is meant by strain energy? Derive the relation for strain-energy from force extension graph?

