

SAMPLE QUESTIONS

SYBSc SEM III

PHYSICS PAPER III

- 1) The number of lattice points in a primitive cell are
a) 1 b) $\frac{1}{2}$ c) 2 d) $\frac{3}{2}$
- 2) The number of atoms present in the unit cell of hcp structure is
a) 2 b.) 4 c) 6 d) 7
- 3) The packing factor of the fcc structure is
a) 52% b) 68% c) 92% d) 74%
- 4) The Miller indices of the plane parallel to y and z-axes are
a. (1 0 0) b. (0 1 0) c. (0 0 1) d. (1 1 1)
- 5) The interplanar spacing between two adjacent parallel planes of Miller indices (h k l) in a cubic lattice is given by,
a) $d = \frac{a}{\sqrt{h^2 + k^2 + l^2}}$ b) $d = \frac{a}{h^2 + k^2 + l^2}$ c) $d = \frac{a}{h^2 + k^2 + l^2}$ d) $d = \frac{a}{h + k + l}$
- 6) Out of the four options below, which one of them is not correct for magnetic susceptibility χ of a magnetic material .
a) $\chi = (\mu_r - 1)$ b.) $\chi = M/H$ c) $\chi = (\mu - \mu_0) / \mu_0$ d) $\chi = (\mu - 1)$
- 7) The magnetic field strength is in a piece of ferric oxide 10^6 ampere/metre.. If the susceptibility at room temperature is 1.5×10^{-3} , magnetisation of the material is
a) 1500 A/m b) 2500 A/m c) 150A/m d) 1.5×10^{-9} A/m
- 8)) Donor type of impurity is formed by adding impurity of valency

a) 3 b) 5 c) 4 d) 6

9) The reflectivity for metals is of the order of

a) 0.9 b) 0,05 c) 0.5 d) 0,01

10) The ability of certain materials to generate a temporary voltage with the change in temperature is called

a) piezoelectricity b) pyroelectric city c) ferroelectric city d) thermoelectric effect

11 The acronym LASER stands for

- a) Light Amplification by Stimulated Emission of Radiation
- b) Light Amplification by Simulated Emission of Radiation
- c) Light Amplification by Spontaneous Emission of Radiation
- d) Light Amplification by Stimulated Emission of Rays

12 Reverberation of sound in a hall is _____.

- a) desirable effect in a controlled way
- b) undesirable effect
- c) sometimes desirable and sometimes undesirable
- d) essential evil

13 The ideal absorber of the sound: _____.

- a) open window
- b) carpet
- c) heavy curtain
- d) perforated cellulose fiber files

14 Multimode step index fiber has _____

- a) Large core diameter & large numerical aperture

- b) Large core diameter and small numerical aperture
- c) Small core diameter and large numerical aperture
- d) Small core diameter & small numerical aperture

15 Optimum reverberation time for music is _____.

- a. 0.5 to 1 seconds
- b. 0 to 1 seconds
- c. 1 to 5 seconds
- d. Above 5 seconds