

SOLID STATE AND SURFACE CHEMISTRY

Std. XII
CHEMISTRY

Time: 1½
Max.Marks: 75

PART - I

Choose the correct answer

(15 × 1 = 15)

- The number of Chloride ions that surrounds the central Na^+ ion in NaCl crystal is
a 2 b 8 c 6 d 4
- The crystal structure of CsCl is
a Simple cubic b Face-centred cubic
c Tetragonal d Body centred cubic
- An example for Frenkel defect is
a AgBr b NaCl c CsCl d FeS
- In the Bragg's equation for diffraction of X-rays, 'n' represents
a The number of moles b Avogadro Number
c Order of reflection d A quantum number
- The number of close neighbours in a body centred cubic lattice of identical spheres is
a 6 b 4 c 12 d 8
- Rutile is
a TiO_2 b Cu_2O c MoS_2 d Ru
- An evidence for wave nature of X-ray is
a photo electric effect b diffraction
c localization d all of these
- The wave length of X-rays is in the order of
a 10^{-10} cm b 10^{-8} mm
c 10^{-8} cm d 10^{-12} cm
- The angle θ in Braggs equation is angle of
a reflection b incidence
c deflection d refraction
- A molecular crystal is
a diamond b NaCl
c Cu d ice
- When an oil soluble dye is mixed with emulsion and the emulsion remains colourless then, the emulsion is
a O/W b W/O
c O/O d W/W

12. For selective hydrogenation of alkynes into alkene the catalyst used is
- Ni at 250 ° C
 - Pt at 25 ° C
 - Raney nickel
 - Pd, partially inactivated by quinoline.
13. The organic reducing agent used for the preparation of Silver sol by reduction method is
- formic acid
 - tannic acid
 - tamin
 - ethyl formate.
14. Cheese is an example for
- foam
 - gel
 - aerosol
 - solid sol
15. Haze is an example of
- Solid dispersed in gas
 - gas dispersed in gas
 - Solid dispersed in liquid
 - gas dispersed in liquid

PART - II

(10 × 3 = 30)

Answer all the questions

- What is a unit cell?
- What is a diffraction pattern?
- What is vitreous state?
- State Bragg's law.
- Mention the uses of ^{super}semi conductors.
- What is adsorption?
- Define peptisation.
- State catalysis.
- What is Brownian movement?
- Why does sky appear blue?

PART - III

(4 × 5 = 20)

Answer all the questions

- Explain Bragg's spectrometer method?
- Write notes on
 - Schotky defects
 - Frenkel defects
- Distinguish between physical adsorption and chemical adsorption.
- Write notes on emulsions.

PART - IV

Answer the following

(1 × 10 = 10)

- Write the properties of ionic crystals.
 - Explain intermediate compound formations theory of catalysis.