



# YASHWANT CLASSES

Head Office: Govind Vihar Tower, Behind Vaishali Cinema, Badlapur (W)

Date : 04-07-2022

Time : 00:10:00

Marks : 40

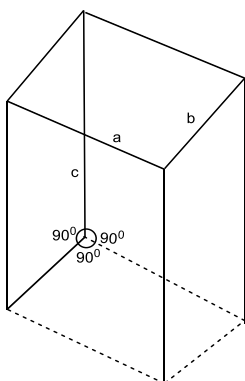
TEST ID: 120

CHEMISTRY

## 1. THE SOLID STATE

### Single Correct Answer Type

- A match box exhibits :
  - Cubic geometry
  - Monoclinic geometry
  - Orthorhombic geometry
  - Tetragonal geometry
- If we mix a pentavalent impurity in a crystal lattice of germanium, what type of semiconductor formation will occur?
  - p -type
  - n -type
  - Both (a) and (b)
  - None of the two
- The unit cell with the structure below refers to.....crystal system.



- Cubic
  - Orthorhombic
  - Tetragonal
  - Trigonal
- The ratio of cations to anion in a closed pack tetrahedral is :
    - 0.414
    - 0.225
    - 0.02
    - None of these
  - The oxide that possesses electrical conductivity :

- $V_2O_5$
  - $CrO_2$
  - $NiO$
  - $MnO$
- CsBr crystallises in a body centred cubic lattice. The unit cell length is 436.6 pm. Given that the atomic mass of Cs = 133 and that of Br = 80 amu and Avogadro number being  $6.02 \times 10^{23} \text{ mol}^{-1}$ , the density of CsBr is :
    - 8.25 g/cm<sup>3</sup>
    - 4.25 g/cm<sup>3</sup>
    - 42.5 g/cm<sup>3</sup>
    - 0.425 g/cm<sup>3</sup>
  - The phenomenon in which crystals on subjecting to a pressure or mechanical stress produce electricity is called :
    - Pyro-electricity
    - Piezo-electric effect
    - Ferro-electricity
    - Ferri-electricity
  - The pyknometric density of sodium chloride crystal is  $2.165 \times 10^3 \text{ kg m}^{-3}$  while is X-ray density is  $2.178 \times 10^3 \text{ kg m}^{-3}$ . The fraction of the unoccupied sites in sodium chloride crystal is :
    - 5.96
    - $5.96 \times 10^{-2}$
    - $5.96 \times 10^{-1}$
    - $5.96 \times 10^{-3}$
  - What is the number of tetrahedral voids per atom in a crystal?
    - 1
    - 2
    - 6
    - 8
  - Of the elements Sr, Zr, Mo, Cd and Sb, all of which are in V period, the paramagnetics are:
    - Se, Cd and Sb
    - Zr, Mo and Cd
    - Sr, Zr and Cd
    - Zr, Mo and Sb