Quiz on Learning Prerequisites – Solid State

Among the intermolecular forces, dipole-dipole force, London dispersion force, ionic interaction, and hydrogen bond, which is present in all substance?

- van der Waals force
- dipole-dipole force
- attractive force
- London dispersion force

Why do crystals diffract x-rays?

- X-rays have wavelengths of the order of the atomic spacing
- The used wavelength corresponds to the distance of the periodic lattice formed by the atoms in crystals
- The distance of the crystal planes is in the order of the wavelength.
- All of these.

The angle θ of Bragg's law is

- the angle between the beam and the crystal
- the angle between the beam and the series of planes within the crystal which results in diffraction
- the angle between the crystal and the detector
- all of these

Strain is defined as the ratio of

- change in volume to original volume
- change in length to original length
- change in cross-sectional area to original cross-sectional area
- anyone of above
- none of these

Hook's law holds good up to

- yield point
- limit of proportionality
- breaking point
- elastic limit
- plastic limit

The ratio of direct stress to volumetric strain in case of a body subjected to three mutually perpendicular stresses of equal intensity, is equal to

- Young's modulus
- bulk modulus
- modulus of rigidity
- modulus of elasticity

Second order transitions are described by the Ehrenfest equations which describe a discontinuity for

- the entropy
- the heat capacity
- the isobaric thermal expansion coefficient
- the specific volume