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HOLIDAY HOMEWORK-2018-19

CLASS: XI

SUBJECT	ASSIGNMENT	SIGNATURE
CHEMISTRY	<p>1. Classify the following as amorphous or crystalline solids: Polyurethane, naphthalene, benzoic acid, teflon, potassium nitrate, cellophane, polyvinyl chloride, fibre glass, copper.</p> <p>2. Classify the following solids in different categories based on the nature of intermolecular forces operating in them: Potassium sulphate, tin, benzene, urea, ammonia, water, zinc sulphide, graphite, rubidium, argon, silicon carbide.</p> <p>3. Distinguish between (i) Hexagonal and monoclinic unit cells ii) Face-centred and end-centred unit cells.</p> <p>4. Ferric oxide crystallises in a hexagonal close-packed array of oxide ions with two out of every three octahedral holes occupied by ferric ions. Derive the formula of the ferric oxide.</p> <p>5. Explain the following terms with suitable examples: (i) Schottky defect (ii) Frenkel defect (iii) Interstitials and (iv) F-centres.</p> <p>6. Aluminium crystallises in a cubic close-packed structure. Its metallic radius is 125 pm. (i) What is the length of the side of the unit cell? (ii) How many unit cells are there in 1.00 cm³ of aluminium?</p> <p>7. Silver crystallizes in fcc lattice. If edge length of the cell is 4.07×10^{-8} cm and density is 10.5 g cm^{-3}. Calculate the atomic mass of silver.</p>	

8. A cubic solid is made of two elements P and Q. Atoms of Q are at the corners of the cube and P at the body-centre. What is the formula of the compound? What are the coordination numbers of P and Q?

9. Niobium crystallises in body-centred cubic structure. If density is 8.55 g cm^{-3} , calculate atomic radius of niobium using its atomic mass 93 u.

10 How will you distinguish between the following pairs of terms:

(i) Hexagonal close-packing and cubic close-packing?

(ii) Crystal lattice and unit cell?

(iii) Tetrahedral void and octahedral void?

11. Explain

(i) The basis of similarities and differences between metallic and ionic crystals.

(ii) Ionic solids are hard and brittle.

12. Calculate the efficiency of packing in case of a metal crystal for

(i) simple cubic

(ii) body-centred cubic

(iii) face-centred cubic (with the assumptions that atoms are touching each other).

16. Classify each of the following solids as ionic, metallic, molecular, network (covalent) or amorphous.

(i) Tetra phosphorous decoxide (P_4O_{10}) (ii) Ammonium phosphate ($(\text{NH}_4)_3\text{PO}_4$) (iii) SiC (iv) I_2

(v) P_4 (vi) Plasti (vii) Graphite (viii) Brass (ix) Rb (x) LiBr

