First Mid term Test

Std : XII   **Marks : 50**

Subject : Chemistry   **Time : 1:30 hrs**

PART - I

Choose the best answer :   **10 ×1 = 10**

1) Which of the following is used for concentrating are in metallurgy?

    a) leaching   b) roasting   c) froth floation   d) both (a) and (c)

2) which of he metal is extracted by Hall- Heroult process ?

    a) Al   b) Ni   c) Cu   d) Zn

3) Which of the following pairs of metal are refined by van - Arkel method ?

    a) Zn and Ti   b) Zr and Ti   c) Ni and Ti   d) Ti and Al

4) The geometry at which carbon atom in diamond are bonded to each other is

    a) Tetrahedral   b) Hexagonal   c) Octahedral   d) none of these

5) The stability of +1 oxidation state increases in the sequence

    a) Al<Ga<In<Tl   b) Tl<In<Ga<Al   c) In<Tl<Ga<Al   d) Ga<In<Al<Tl

6) _____ is a sodium salt of tetraboric acid

    a) Boric acid   b) boron nitride   c) borax   d) tetraboric acid

7) On Hydrolysis, BF_3 gives

    a) Boric acid and Boron trioxide   b) Boric acid and Hydrofluoro boric acid

    c) Boric acid only   d) Hydrofluoro Boric acid only

8) CsCl has bcc arrangement its unit cell edge length is 400pm, its inter atomic distance is _____

    a) 400pm   b)800pm   c) $\sqrt{3}/2$ x 400pm   d) $\sqrt{3}$ x 100pm

9) The ratio of close packed atoms to tetrahedral hole in cubic packing is

    a) 1:1   b) 1:2   c)2:1   d)1:4

10) The fraction of total volume occupied by the atoms in a bcc unit cell is ____

    a) $\sqrt{2}\pi/6$ b) $\pi/6$ c) $\sqrt{3}\pi/8$ d) $\pi/4\sqrt{2}$

PART - II

Answer any 6 questions :   **Q.No. 18 is compulsory**   **6 × 2 = 12**

11) Which types of ores can be concentrated by froth floation method? Give two example for such ores.
12) What is auto reduction ?
13) Boron has non metallic character .why?.
14) Draw the structure of CO.
15) Give the uses of silicon tetrachloride.
16) Mention the edge length and crystallographic axes of monoclinic crystal system.
17) What is packing efficienc ?
18) Classify the following as ionic ,covalent molecular and metallic solids
    Brass, ces um chloride, silicon carbide, urea.

PART - III

Answer any 6 questions :   **Q.NO. 26 is compulsory**   **6 × 3 = 18**

19) Describe a method for refining nickel ?
20) How is gold ore leached by cyanide leaching ?
21) Give two example for each of the following
    a) tetragens   b) pnictogens   c) chalcogens
22) Write a short note on hydroboration.
23) Write a note on Fischer-Tropsch synthesis
24) How will you calculate density of the unit cell ?
25) Calculate the percentage efficiency of packing in case of body centered cubic crystal.
26) Complete the following reaction
    a) $SiCl_4 + NH_3 \rightarrow$
    b) $Ca_2B_6O_{11} + Na_2CO_3 + H_2O \xrightarrow{\Delta}$
    c) $Al_2O_3 + C + Cl_2 \rightarrow$

PART – IV

Answer Any 2 of the following :   **2 × 5 = 10**

27) a) Explain the electrometallurgy of Aluminium.   (5)

(or)
b) (i) Distinguish between graphite and diamond.   (3)
(ii) What is Phosgene ? How it is prepared ?   (2)

28) a) (i) Write a note on Zeolites.   (3)

(ii) What is meant by the term co ordination number ? what is the

co ordination number of atoms in a bcc structure ?   (2)

(or)

(b) Write a short note on stoichiometric defects.   (5)

29) a) Describe the structure of diborane.   (5)

(or)

b) (i) How will you identify borate radical ?   (2)

(ii) Which is called as Inorganic benzene ? How it is prepared ? (3)