



CK SCHOOL OF PRACTICAL KNOWLEDGE- CUDDALORE-1

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 ore in metallurgy?
 - a) leaching
 - b) roasting
 - c) froth floatation
 - d) both (a) and (c)
- 2) Which of the 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) $\sqrt{3}/2 \times 400\text{pm}$
 - d) $\sqrt{3} \times 100\text{pm}$
- 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 floatation 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 efficiency ?
- 18) Classify the following as ionic ,covalent molecular and metallic solids.
Brass, cesium 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) $\text{SiCl}_4 + \text{NH}_3 \rightarrow$
b) $\text{Ca}_2\text{B}_6\text{O}_{11} + \text{Na}_2\text{CO}_3 + \text{H}_2\text{O} \xrightarrow{\Delta}$
c) $\text{Al}_2\text{O}_3 + \text{C} + \text{Cl}_2 \rightarrow$

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)