

FIRST MIDTERM TEST 2023

CLASS : XII

TIME : 1.30 HRS

SUBJECT : CHEMISTRY

UNIT-1,6

MARKS : 50

PART-I

Choose the correct answer

10 x 1 = 10

- Graphite and diamond are
 - Covalent and molecular crystals
 - ionic and covalent crystals
 - both covalent crystals
 - both molecular crystals
- Solid CO₂ is an example of
 - Covalent solid
 - metallic solid
 - molecular solid
 - ionic solid
- The crystal with a metal deficiency defect is
 - NaCl
 - FeO
 - ZnO
 - KCl
- The yellow colour in NaCl crystal is due to
 - excitation of electrons in F centers
 - reflection of light from Cl⁻ ion on the surface
 - refraction of light from Na⁺ ion
 - all of the above
- The following set of reactions are used in refining zirconium. This method is called as ____

$$\begin{array}{ccc} \text{Zr(impure)} + 2\text{I}_2 & \xrightarrow{523\text{K}} & \text{ZrI}_4 \\ & \xrightarrow{1800\text{K}} & \\ \text{ZrI}_4 & & \text{Zr(pure)} + 2\text{I}_2 \end{array}$$
 - Zone refining
 - Liquation
 - Mond's process
 - van Arkel process
- The vacant space in Sc lattice unit cell is
 - 48%
 - 23%
 - 32%
 - 26%
- Which of the metal is extracted by Hall-Heroult process?
 - Al
 - Ni
 - Cu
 - Zn
- Match :

(1) Cyanide process	(i) Ultrapure Ge
(2) Froth floatation process	(ii) Extraction of Al
(3) Electrolytic reduction	(iii) Dressing of ZnS
(4) Zone refining	(iv) Extraction of Au

 - (1)-(i) , (2)-(ii) , (3)-(iii) , (4)-(iv)
 - (1)-(ii) , (2)-(iv) , (3)-(i) , (4)-(iii)
 - (1)-(iv) , (2)-(iii) , (3)-(ii) , (4)-(i)
 - (1)-(iii) , (2)-(i) , (3)-(iv) , (4)-(ii)
- Wolframite ore is separated from tinstone by the process of
 - Smelting
 - Calcination
 - Roasting
 - Electromagnetic separation
- Fe₂O₃ is reduced to Fe by
 - C
 - CO
 - H₂
 - Al

PART-II**Answer any five questions. Q.no : 16 is compulsory****5 x 2 = 10**

11. What is the role of limestone in the extraction of iron from its oxide Fe_2O_3 ?
12. What is cementation?
13. Which type of ores can be concentrated by froth floatation method? Give two examples for such ores.
14. Give the limitations of Ellingham diagram
15. Define unit cell.
16. Calculate the number of atoms in a FCC unit cell.
17. If the Radius ratio of the compound is between 0.732 to 1.0 find out the coordination number and structure of the compound.

PART-III**Answer any five questions. Q.no : 24 is compulsory****5 x 3 = 15**

18. Explain the process of concentration of non magnetic ores with magnetic impurities with an example.
19. Distinguish between minerals and ores.
20. Explain the principle of electrolytic refining with an example.
21. Give any three characteristics of ionic crystals
22. What is meant by term coordination number? What is the coordination number BCC structure?
23. What are primitive and non primitive unit cell ?
24. calculate the percentage efficiency of packing in case of Face centered cubic Crystal

PART-IV**Answer all the questions****3 x 5 = 15**

- 25.a) i) Explain the refining process of nickel.(3)
ii) What is calcination ? with example (2)
(OR)
b) Explain concentration of ore by froth floatation method.(5)
- 26.a) i) What is auto-reduction ? give example(2)
ii) Write a short note on alumina thermic process ?(3)
(OR)
b) Distinguish between crystalline and amorphous solid(5)
27. a) i) Write a note on schotcky defect.(2 ½)
ii) Write a note on Frenkel defect.(2 ½)
(OR)
b) i) Write any three difference between tetrahedral and Octahedral voids ?(3)
ii) How are point defect classified ?(2)
