

HIGHER SECONDARY SECOND YEAR**CHEMISTRY****IMPORTANT QUESTIONS****UNIT-1 Metallurgy**

1. Difference – Ore and Mineral
2. List out the metallurgical process
3. Define gangue.
4. Define gravity separation
5. Write about froth flotation process.
6. Define leaching.
7. Define roasting.
8. Define Calcination.
9. Define smelting.
10. Write about auto reduction.
11. Write the application of Ellingham diagram.
12. Write the limitations of Ellingham diagram.
13. Define electrolytic refining.
14. Discuss zone refining.
15. Discuss the vapour phase methods (Mond & Van-arkel method)
16. Explain Hall-Heroult process.
17. Write about Magnetic separation.
18. Write Oxide ore reduced by metal.

UNIT-2. p-Block elements

1. What factors are responsible for p-block (first elements) anomalous behavior.
2. Define inert pair effect.
3. Define catenation.
4. Write allotropism with example.
5. Boron does not react directly with hydrogen. Suggest one method to prepare diborane from BF_3
6. Write preparation of Borax.

7. Write borax beads test.
8. What are conditions necessary for catenation.
9. Describe action of heat of boric acid.
10. How will you identify the presence of Borate in a given compound.
11. Give the uses of Borax.
12. What is hydroboration.
13. Give the preparation of Borazine or Borazole or inorganic benzene.
14. Briefly explain the structure of diborane.
15. Write McAfee process.
16. How is potash alum prepared.
17. What is burnt alum.
18. Give the uses of potash alum.
19. Discuss the allotropes of carbon.
20. Write Fischer- Tropsch synthesis.
21. Explain the structures of CO , CO_2 .
22. CO , CO_2 are strong reducing agents. Justify the statement.
23. Give water gas equilibrium.
24. Uses of silicone.
25. Briefly explain about silicates.

UNIT-4- Transition elements and inner transition elements

1. What are inner transition elements? Give the example?
2. Explain the Oxidation states of 3d series elements?
3. Why do transition elements form complex?
4. Most of the transition metals and their compounds have catalytic activity why?
5. Why d block elements form alloys?
6. Which is more stable Fe^{2+} or Fe^{3+} - Explain?
7. Explain why compounds of Cu^{2+} are coloured but that Zn^{2+} are colourless?
8. Why Cu exhibits +1 oxidation state. Why?
9. Which is more stable Mn^{2+} or Mn^{3+}

10. Calculate the number of unpaired elements in Ti^{+3} , Mn^{2+} and calculate the spin only magnetic moment?
11. Write the electronic configuration of chromium and copper?
12. Write the electronic configuration of Ce^{4+} and Co^{2+} ?
13. What is Lanthanide contraction and its consequences?
14. Transition elements show high melting points. Why?
15. What is Ziegler - Natta catalyst and their action?
16. Define standard electrode potential?
17. Explain Cr^{2+} is strong reducing agent while Mn^{3+} is strong oxidizing agent.
18. Which is stronger reducing agent Cr^{2+} or Fe^{2+} .
19. Write chromyl chloride test?
20. Write uses of potassium dichromate and potassium permanganate.
21. Describe preparation of potassium dichromate?
22. Write structure of chromate ion and permanganate ion?
23. Write any one oxidation property of dichromate?
24. Differences between lanthanides and actinides?

UNIT-6- Solid State

1. Classify the types of solids?
2. Give any three characteristics of ionic crystals?
3. Differentiate crystalline and amorphous solids?
4. Define isotropy?
5. Define anisotropy?
6. Define molecular solids?
7. Give the any two examples of polar and non polar solids?
8. Define Unit cell?
9. Explain seven types of crystal lattice?
10. Write Bragg's equation?
11. Distinguish hexagonal and close cubic packing?
12. Distinguish tetrahedral and octahedral voids?
13. What are point defects?

14. Write short notes on Schottky and Frenkel defects?
15. Write short notes on Metal excess and metal deficiency defects?
16. Calculate the number of atoms in sc, bcc, fcc?
17. Calculate packing efficiency of bcc, sc, fcc?
18. What is F-center?

UNIT-7- Chemical kinetics

1. What is rate?
2. Define rate of reaction?
3. Define average rate and instantaneous rate?
4. Define rate law and rate constant?
5. What is molecularity of reaction?
6. Define order of reaction?
7. Explain pseudo first order reaction?
8. Give the example of zero order reaction?
9. Give the example of first order reaction?
10. Define half life time?
11. How half life time of the reaction relates to rate constant?
12. Describe graphical representation of first order reaction?
13. Write Arrhenius equation and explains the terms involved?
14. What is activation energy?
15. How does concentration of reactant influence the rate of reaction?
16. How do nature of reactants influence rate of reaction?
17. How do effect of catalyst on reaction rate with an example?
18. Explain collision theory?
19. Derive integrated rate equation of first order reaction?