**KIIT WORLD SCHOOL**

**ASSIGNMENT**

**CLASS 12 CHEMISTRY**

**UNIT 6: General principles and processes of isolation of elements**

**KNOWLEDGE BASED:**

**Q1. What is a mineral? How does it differ from an ore?**

**Q2. Give the formula of the ores: haematite, bauxite, kaolinite, copper pyrites, cuprite, sphalerite, calamine.**

**Q3. Name two ores that are concentrated by froth floatation method.**

**Q4. Define the following terms:**

**Hydrometallurgy, chromatography, leaching, distillation, electrolysis, liquation.**

**Q5. Name two oxides of iron.**

**Q6. What is slag?**

**Q7. Why do few elements occur in native state while others do not?**

**Q8. What is electrorefining? Explain with an example.**

**Q9. Name the sulphide ores of : zinc and lead.**

**Q10. Write the reaction occurring in the blast furnace in the metallurgy of iron at 900-1500K.**

**Q11. Differentiate between roasting and calcination with examples.**

**Q12. A) Pine oil is used in froth floatation method. Why?**

 **B) what is meant by benefaction process?**

**Q13. List the important steps for the extraction of zinc from zinc blende.**

**Q14. What is electrolytic reduction? Explain with an example.**

**Q15.. List the important steps with equations for the extraction of Al from bauxite ore. Give its important uses.**

**Q16. What is meant by concentration of ore? Describe the various methods for concentration of ore.**

**Q17. Describe chromatography in detail.**

**Q18. Describe the underlying principle for :**

1. **Electrolytic refining**
2. **Vapour phase refining**

**Q19. List various uses of Al, Cu, Zn and Fe.**

**UNDERSTANDING BASED**

**Q20. Which method is used to get the metal in highly pure state?**

**Q21. Which is better reducing agent at 938K, C or CO? why ?**

**Q22. Comment on the statement, “ every ore is a mineral but but every mineral is not an ore”.**

**Q23. What is the role of collector and froth stabilizer in froth floatation method?**

**Q24.which is the cheapest and most abundant reducing agent which is used in the extraction of metals?**

**Q25. What type ores are roasted?**

**Q26. Why is zinc and not copper used for the recovery of silver from the complex [Ag(CN)2]-1**

**Q27.An ore of galena (PbS) is contaminated with zinc blende (ZnS). Name one chemical which can be used to concentrate galena selectively by froth floatation method.**

**Q28.. Why the graphite rods in the extraction of Al from molten Al2O3 have to be replaced from time to time.**

**Q29. Thermite process is quite useful for repairing broken parts of machines. Explain**

**APPLICATION/SKILL**

**Q30. The extraction of gold by leaching with NaCN involves both oxidation and reduction. Justify giving equations.**

**Q31. In the metallurgy of copper partial roasting of sulphide ore is done. Why?**

**Q32. Why is froth floatation method selected for concentration of sulphide ores?**

**HOTS**

**Q33. How the concept of coupling reactions useful in explaining the occurance of non- spontaneous thermochemical reactions? Explain giving reactions.**

**Q34. Free energies of formation ( fG) of MgO(s) and CO(g) at 1273K and 2273K are given below:**

**( fG)(MgO)= -941 kJ/mol AT 1273K = -341 kJ/mol at 2273K**

**( fG) (CO)= -439 kJ/mol at 1273K = -628 kJ/mol at 2273K**

**On the basis of above data , predict the temperature at which carbon can be used as reducing agent for MgO(s). Give the equations also.**

**Q35. Ellingham diagram form sthe basis for choice of reducing agent. How?**

**VBQ**

**Q36. froth floatation process brings the lighter components as froth. What value do you learn from this in separating your impurities from life?**

**Q37. Spontaneous process is essential to bring about reduction. When does the spontaneity in life comes?**

**ATTEMPT ALL INTEXT AND BACK EXERCISE QUESTIONS OF NCERT**