INDIAN SCHOOL MUSCAT
SENIOR SECTION
DEPARTMENT OF CHEMISTRY
CLASS XII
General Principles and Processes of Isolation of Elements
WORKSHEET – 07

1. Out of C and CO, which is a better reducing agent at 673 K?
2. How is copper extracted with a low grade ore of it?
3. What is the role of zinc in extraction of Silver?
4. Describe the role of SiO_2 in extraction of copper from copper matte and write the equation involved.
5. What is "copper matte"?
6. What are froth stabilizers? Give two examples
7. The graphite electrodes in the extraction of 'aluminium' by Hall-Heroult process need to be changed frequently. Why?
8. Describe how the following changes are brought out:
   a) Pig iron into steel.
   b) Zinc oxide into zinc metal.
9. Write the chemical reactions involved in the process of extraction of Gold. Explain the role of dilute NaCN and Zn in this process.
10. Differentiate between
    a) Calcination and roasting
    b) Electrolytic reduction and electrolytic refining
    c) Flux and slag
11. Write the chemical reactions which take place in the following operations:
    a) Electrolytic reduction of Al_2O_3.
    b) Isolation of Zn from zinc blende.
    c) Mond's process for refining of Ni.
    d) I_2 in van Arkel process of refining
    e) Cryolite in extraction of Aluminium
    f) Dilute NaCN in extraction of silver
    g) Collector in the froth floatation process
12. Describe the principle involved in:
    a) Electrolytic refining of metals.
    b) Zone refining of metals
    c) Froth floatation process
    d) Chromatography
    e) Vapour phase refining
13. Give reasons:
    a) Copper matte is put in silica lined convertor.
    b) Cryolite is added to alumina during electrolytic reduction.
    c) Pine oil is used in the froth floatation process
14. a) Name the method used for the refining of titanium.
    b) What is the role of Zn in the extraction of silver?
    c) Reduction of metal oxide to metal becomes easier if the metal obtained is in liquid state. Why?

15. Write down the reactions taking place in different zones of a blast furnace during extraction of iron. How is pig iron different from cast iron?

16. a) Name the impurities deposit as anode mud during electrolytic refining of copper.
    b) What type of metal can be refined by liquation method.
    c) Name the method for refining of metals which are used as semiconductors.
17. Copper can be extracted by hydrometallurgy but not zinc. Explain?

18. What is German silver? Write its use.

19. Explain the following:-

    a) Zinc but not copper is used for recovery of Ag from the complex $[Ag(CN)_2]^-$.
    b) Partial roasting of sulphide ore is done in the metallurgy of copper.
    c) Extraction of Cu from pyrites is difficult than that from its oxide ore through reduction.
20. Describe the principles of extraction of Zinc from zinc blende.

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