

CBSE 12th Chemistry Chapter- 6

(General Principles and Processes of Isolation of Elements)

Unsolved Important Questions

SECTION A

(Each question in this section carry 1 mark)

- Q.1.** Why is the froth flotation method selected for the concentration of sulphide ores?
- Q.2.** What is the role of graphic in the electrometallurgy of aluminum?
- Q.3.** Which reducing agent is employed to get copper form the leached low grade copper ore?
- Q.4.** What is meant by the term ‘pyro metallurgy’?
- Q.5.** Differentiate between a mineral and an ore.
- Q.6.** How is copper extracted from a low grade ore of it?
- Q.8.** What is the role of zinc metal in the extraction of silver?

SECTION B

(Each question in this section carry 2 marks)

- Q.9.** (a) Which solution is used for the leaching of silver metal in the presence of air in the metallurgy of silver?
- (b) Out of C and CO, which is a better reducing agent at the lower temperature range in the blast furnace to extract iron from the oxide ore?
- Q.10.** Outline the principles behind the refining of metals by the following methods:
- (i) Zone refining method
- (ii) Chromatographic method

Q.11. Describe the underlying principle of each of the following metal refining methods:

- (i) Electrolytic refining of metals**
- (ii) Vapour phase refining of metals.**

Q.12. Describe the principal controlling each of the following processes:

- (i) Vapour phase refining of titanium metal.**
- (ii) Froth floatation method of concentration of a sulphide ore**

Q.13. Which methods are usually employed for purifying the following metals

- (i) Nickel**
- (ii) Germanium**

Q. 14. (a) Name the method used for removing gangue for sulphide ores.

(b) How is wrought iron different from steel.

Q.15. Explain the principle of the method of electrolytic refining of metals. Give one example.

Q.16. (i) Name the method of refining of nickel.

(ii) What is the role of cryolite in the extraction of aluminum.

(iii) What is the role of limestone in the extraction of iron from its oxides.

SECTION C

(Each question in this section carry 3 marks)

Q. 17. State briefly the principles which serve as basis for the following operations in metallurgy:

- (i) Froth floatation process**
- (ii) Zone refining**
- (iii) Refining by liquation**

Q.18. Describe how the following changes are brought about:

- (i) Pig iron into steel.**
- (ii) Zinc oxide into metallic zinc.**
- (iii) Impure titanium into pure titanium.**

- Q.19.** (i) NaCN in the extraction of gold from gold ore.
(ii) SiO₂ in the extraction of copper from copper matter.
(iii) Iodine in the refining of zirconium.

Write chemical equations for the involved reactions.

Q.20. Describe the principle behind each of the following processes: 3 marks

- (i) Vapor phase refining of a metal.
(ii) Electrolytic refining of a metal
(iii) Recovery of silver after ore

- Q.21.** (i) Indicate the principle behind the method used for the refining of zinc.
(ii) What is the role of silica in the extraction of copper?
(iii) Which form of the iron is the purest form of commercial iron?

- Q.22.** (a) Write the principle of method used for the refining of germanium.
(b) Out of PbS and PbCO₃ (ores of lead), which one is concentrated by froth floatation process preferably?
(c) What is the significance of leaching in the extraction of aluminium?

Q.23. What chemical principle is involved in choosing a reducing agent for getting the metal from its oxide ore? Consider the metal oxides, Al₂O₃ and Fe₂O₃, and justify the choice of reducing agent in each case.

Q.24. Describe the role of the following:

- (i) NaCN in the extraction of silver from a silver ore
(ii) Iodine in the refining of titanium
(iii) Cryolite in the metallurgy of aluminum.

- Q.25.** (i) Name the method of refining to obtain silicon of high purity.
(ii) What is the role of SiO₂ in the extraction of copper?
(iii) What is the role of depressants in froth floatation process?

Q.26. Write the principle of the following:

- (a) Zone refining
(b) Froth floatation process
(c) Chromatography

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