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QUESTION BANK

L-6 General Principles & Processes of Isolation Of Elements.

1-Mark Questions

- Q.1. Name method that is used for refining of nickel.
Q.2. Differentiate between a mineral and an ore.
Q.3. What is the role of zinc metal in the extraction of nickel.
Q.4. What is meant by the term pyrometallurgy?
Q.5. What are the collectors used in froth floatation process? Name a substance that can be used as such.
Q.6. What types of ores can be concentrated by magnetic separation method?
Q.7. Name the chief role of aluminium and zinc.
Q.8. How is copper extracted from a low grade ore of it?
Q.9. What is the role of NaOH in the metallurgy of aluminium?
Q.10. What is the composition of copper matte?

2-Marks Questions

- Q.1. Describe the principle involved in each of the following processes :
(i) Zone refining of metals. (ii) Vapour phase refining of metals.
Q.2. What are the chemical reactions involved in the extraction of silver from silver ore.
Q.3. Define the following terms:
(i) Roasting (ii) Calcination
Q.4. Write the chemical reactions involved in the extraction of silver from silver ore.
Q.5. Explain the principle of the method of electrolyte refining of metals. Give one example.
Q.6. What is the role of the following:
(i) Iodine in the refining of zirconium. (ii) Silica in the extraction of copper from copper matte.
Q. 7. (i) Name the method used for removing gangue from sulphide ores.
(ii) How is wrought iron different from steel?
Q.8. Name one chief ore each of copper & aluminium. Name the method used for the concentration of these two ores.
Q.9. State the basis of refining a substance by chromatographic method. Under what circumstances is this method specially useful?
Q.10. Explain the role of the following: (i) NaCN in the extraction of silver.
(ii) SiO_2 in the extraction of copper.

3-Marks Questions

- Q.1. Describe the principle behind each of the following processes:

- (i) Vapour phase refining of a metal.
- (ii) Electrolytic refining of a metal.
- (iii) Recovery of silver after silver ore was leached with NaCN.

Q.2. Describe how the following changes are brought about?

- (i) Pig iron into steel
- (ii) Bauxite into pure alumina
- (iii) Impure copper into pure copper

Q.3. What chemical principle is involved in choosing a reducing agent for getting the metal from its oxide ore? Consider the metal oxides, Al_2O_3 & Fe_2O_3 , and justify the choice of reducing agent in each case?

Q.4. 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.5. Give reasons for the following:

- (i) Alumina is dissolved in cryolite instead of being electrolysed directly.
 - (ii) Zinc oxide can be reduced to the metal by heating the carbon but not Cr_2O_3 .
 - (iii) Extraction of copper directly from sulphide ores is less favourable than that from its oxide ore through reduction.
- Q.6. Write the reactions involved in the following process:
- (i) Leaching of bauxite ore to prepare pure alumina.
 - (ii) Refining of zirconium by van-Arkel method.
 - (iii) Recovery of gold after gold ore has leached with NaCN solution.