Episode No – 26
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Metallurgy and Solids

* Which method of Concentration depends on the difference in Specific gravity of are and gangue?

a. hydraulic washing b. leaching

c. magnetic separation d. froth flotation

Ans - a

* Which of the fallowing metal oxide undergoes reduction with aluminum

a. H_2o_3 b. Z_nO c. Cr_2o_3 d. Sno_2

Ans - c

***** Which of the following OH of aluminum is known as gibbsite ?

a. Al_2O_3 b. $Al_2O_3.H_2O$

c. $Al_2O_3.2H_2O$ d. $Al_2O_3.3H_2O$

Ans - d

* The roll of flux in metallurgy is

a. convert soluble impurities into insoluble impurities

b. Reduction of metal oxide

c. Retining of metal

d. convert infusible impurities into fusible material

Ans - d

* Which is the hottest zone in the blast furnace?

a) Zone of reduction

b) Zone of combustion

c) Zone of slag formation

d) Zone of fusion

Ans – b

* In the process of smelting,

a) The OH Is heated in absence of air

b) The OH is concentrated

c) The OH is heated in presence of air

d) The OH is melted

Ans - d

* In pig iron, the maximum impurity is

a) Phosphorus

b) Manganese

c) Carbon

d) Silicon

Ans – c

* Which of the following metals cannot be extracted by carbon reduction process?

a) Pb b) Al c) Hg d) Zn

Ans - b

* An alloy which doesn't contain copper is

a) Solder b) Bronze c) Brass d) Bell metal

Ans - a

* In the extraction of nickel by mond's process, the metal is obtained by

a) Electrochemical reduction

b) Thermal decomposition

c) Chemical reduction by aluminium

d) Reduction by carbon

Ans – b

* The curves in Ellingham diagram represent

a) Sulphides b) Oxides c) Halides d) All of these

Ans - d

* Which metal is refined by poling?

a) Silver b) Sodium c) Buster copper d) Zinc

Ans – c

* In the electrolysis of alumina, ctyolite is added to

a) Increase the M.P of alumina

b) Increase the electrical conductivity

c) Minimise the anodic effect

d) Move impurities from alumina

Ans - b

* Which type of clystalline solid is an insulator in solid state as well as in melten state and possess very high M.P?

a) Covalent Solid b) Ionic Solids

b) Molecular Solids d) Metallic Solids

Ans - a

* Which of the following has the least intermolecular force?

a) Water b) Ethanol c) Diethylethes d) Methane

Ans - d

* Solid CO_2 is an example of

a) Ionic Solid b) Metallic Solid c) Molecular Solid d) Covalent Solid

Ans - c

* Identify the correct Statement

a) Cohesive energy of Ionic Crystals = Cohesive energy of molecular crystals

b) Cohesive energy of Ionic Crystals > Cohesive energy of molecular Crystals

c) Cohesive energy of Ionic Crystals < Cohesive energy of molecular Crystals

d) Cohesive energy is same all of crystals

Ans – b

* Which of the following statement is true

a) ΔH_f is equal in magnitude but opposite in sign to the ΔH_c

b) ΔH_f is equal in magnitude but has same sign to that of ΔH_c

c) $\Delta H_f = \frac{1}{\sqrt{\Delta Hc}}$

d) $\Delta H_f \alpha \frac{1}{\sqrt{\Delta Hc}}$

Ans – a

* If 'a' represents the edge length of the cubic system, then the ratio of the radli of the sphere of SCC, BCC & FCC is

a) 1a : √3a : √2a

b) $\frac{1}{2}$ a : $\frac{\sqrt{3}}{4}$a : $\frac{1}{2\sqrt{2}}$a

c) $\frac{1}{2}$ a : √3 a : $\frac{1}{\sqrt{2}}$ a

d) $\frac{1}{2}\ a : \frac{\sqrt{3}}{2}\ a : a$

Ans - b

* Copper crystallizes in FCC with a unit cell length of 361 pm. What is the radius of copper atom?

a) 157 pm b) 181 pm c) 108 pm d) 127 pm

Ans - d