

Daily Tutorial Sheet 5

Level – 1

- 61.(B)** Pig Iron $\xrightarrow[\text{Fe}_2\text{O}_3]{\text{Roasting}}$ Cast Iron
- 62.(C)** Blister copper is 98 % Cu and 2 % impurities
- 63.(A)** Heating steel to bright redness and then cooling it very slowly makes the steel soft and ductile. This process is called annealing.
- 64.(C)** It involves reduction followed by oxidation.
- 65.(B) Cast iron:**
- It has a carbon percentage of 2.5 to 5%
 - It is the most impure form of iron
 - It does not rust easily and it is neither tempered nor magnetized easily.
 - It is hard, brittle and has very little ductility.
- Wrought iron:**
- It is the purest form of iron.
 - It is extremely tough, highly malleable and ductile.
 - It is obtained from cast iron by heating with hematite (Fe_2O_3).
- Pig iron:**
- Iron obtained from the blast furnace is called pig iron.
 - Molten pig iron on sudden cooling forms cast iron.
- 66.(C)** Oxygen present in air oxidise sodium sulphite formed
- 67.(C)** $\text{MgCl}_2 + \text{Na(s)} \longrightarrow 2\text{NaCl} + \text{Mg}$
(anhydrous)
- Magnesium is also obtained by electrolysis of fused carnallite ($\text{KCl} \cdot \text{MgCl}_2 \cdot 6\text{H}_2\text{O}$)
- 68.(B)** Lead can be purified by the following processes.
- (1)** Softening process **(2)** Desilverisation **(3)** Electrolytic refining
- In softening process, the impure metal is melted on the hearth of the reverberatory furnace in a current of air. The base metals are oxidised and come on the surface of the molten mass as scum which is removed. Removal of Ag impurities from lead is called as desilverisation.
- 69.(A)** Baeyer's process is mainly applied when bauxite ore is contaminated with ferric oxide as chief impurity. The heated crushed ore is digested with conc. NaOH. Here Al_2O_3 dissolves to form soluble sodium meta aluminate $\text{Na}[\text{Al}(\text{OH})_4]$ or NaAlO_2 . The impurities of ferric oxide and silica remain insoluble and settle down.
- 70.(D)** Extraction of copper involve bessemerisation.
- 71.(C)** Hydrometallurgical process of extraction of gold is based on its properties to form soluble cyano complex $[\text{Ag}(\text{CN})_2]^-$ (Water soluble).
- 72.(D)** $4\text{Ag} + 8\text{NaCN} + 2\text{H}_2\text{O} + \text{O}_2 \longrightarrow 4\text{Na}[\text{Ag}(\text{CN})_2] + 4\text{NaOH}$
 $2\text{Na}[\text{Ag}(\text{CN})_2] + \text{Zn} \longrightarrow \text{Na}_2[\text{Zn}(\text{CN})_4] + 2\text{Ag(s)}$
- 73.(B)** Magnalium = Al(95%) + Mg(5%)
- 74.(B)** Fact
- 75.(A)** Carbon as the major impurity