




Date Planned : __ / __ / __	Daily Tutorial Sheet-1	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	JEE Main (Archive)	Exact Duration : _____

- When the sample of copper with zinc impurity is to be purified by electrolysis, the appropriate electrodes are :  (2002)

Cathode	Anode
(A) pure zinc	pure copper
(B) impure sample	pure copper
(C) impure zinc	impure sample
(D) pure copper	impure sample
- Cyanide process is used for the extraction of : (2002)


(A) barium (B) aluminium (C) boron (D) silver
- The metal extracted by leaching with a cyanide is : (2002)

(A) Mg (B) Ag (C) Cu (D) Na
- Aluminium is extracted by the electrolysis of :  (2002)

(A) bauxite
(B) alumina
(C) alumina mixed with molten cryolite
(D) molten cryolite
- For the reactions,  (2002)
$$\text{C} + \text{O}_2 \longrightarrow \text{CO}_2; \quad \Delta H = -393 \text{ J}$$

$$2\text{Zn} + \text{O}_2 \longrightarrow 2\text{ZnO}; \quad \Delta H = -412 \text{ J}$$

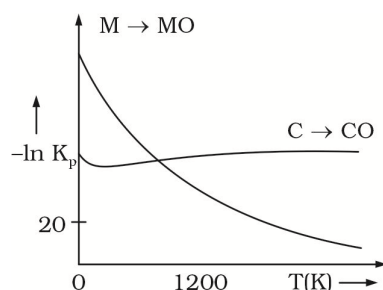
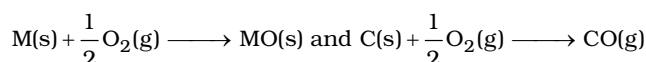
(A) carbon can oxidise Zn (B) oxidation of carbon is not feasible
(C) oxidation of Zn is not feasible (D) Zn can oxidise carbon
- During the process of electrolytic refining of copper, some metals present as impurity settle as 'anode mud'. These are : (2005)

(A) Sn and Ag (B) Pb and Zn (C) Ag and Au (D) Fe and Ni
- Which of the following factors is of no significance for roasting sulphide ores to the oxides and not subjecting the sulphide ores to carbon reduction directly ?  (2008)

(A) CO_2 is more volatile than CS_2
(B) Metal sulphides are thermodynamically more stable than CS_2
(C) CO_2 is thermodynamically more stable than CS_2
(D) Metal sulphides are less stable than the corresponding oxides
- Which method of purification is represented by the following equation ? (2012)
$$\text{Ti(s)} + 2\text{I}_2(\text{g}) \xrightarrow{523\text{K}} \text{TiI}_4(\text{g}) \xrightarrow{1700\text{K}} \text{Ti(s)} + 2\text{I}_2(\text{g})$$

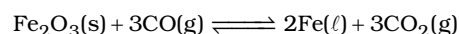
(A) Cupellation (B) Poling (C) Van Arkel (D) Zone refining

9. Which series of reactions correctly represents chemical relations related to iron and its compound ? (2014)
- (A) $\text{Fe} \xrightarrow{\text{O}_2, \text{heat}} \text{Fe}_3\text{O}_4 \xrightarrow{\text{CO}, 600^\circ\text{C}} \text{FeO} \xrightarrow{\text{CO}, 700^\circ\text{C}} \text{Fe}$
- (B) $\text{Fe} \xrightarrow{\text{dil. H}_2\text{SO}_4} \text{FeSO}_4 \xrightarrow{\text{H}_2\text{SO}_4, \text{O}_2} \text{Fe}_2(\text{SO}_4)_3 \xrightarrow{\text{heat}} \text{Fe}$
- (C) $\text{Fe} \xrightarrow{\text{O}_2, \text{heat}} \text{FeO} \xrightarrow{\text{dil. H}_2\text{SO}_4} \text{FeSO}_4 \xrightarrow{\text{heat}} \text{Fe}$
- (D) $\text{Fe} \xrightarrow{\text{Cl}_2, \text{heat}} \text{FeCl}_3 \xrightarrow{\text{heat, air}} \text{FeCl}_2 \xrightarrow{\text{Zn}} \text{Fe}$
10. In the isolation of metals, calcination process usually results in : (2015)
- (A) metal carbonate (B) metal oxide
(C) metal sulphide (D) metal hydroxide
11. Calamine is an ore of : (2015)
- (A) aluminium (B) copper (C) iron (D) zinc
12. Which one of the following ores is best concentrated by froth floatation method ? (2016)
- (A) Magnetite (B) Siderite (C) Galena (D) Malachite
13. The plot shows the variation of $-\ln K_p$ versus temperature for the two reactions. (2016)



Identify the correct statement.

- (A) At $T < 1200$ K, oxidation of carbon is unfavourable.
(B) Oxidation of carbon is favourable at all temperatures.
(C) At $T < 1200$ K, the reaction $\text{MO(s)} + \text{C(s)} \longrightarrow \text{M(s)} + \text{CO(g)}$ is spontaneous.
(D) At $T > 1200$ K, carbon will reduce MO(s) to M(s)
14. Extraction of copper by smelting uses silica as an additive to remove : (2016)
- (A) Cu_2O (B) FeS (C) FeO (D) Cu_2S
15. The following reaction occurs in the blast furnace where iron ore is reduced to iron metal :



Using the Le Chatelier's principle, predict which one of the following will not disturb the equilibrium ?

- (A) Addition of Fe_2O_3 (B) Removal of CO_2 (2017)
(C) Removal of CO (D) Addition of CO_2