

**Class: 12**  
**Subject: Chemistry**  
**Topic: General principles**  
**No. of Questions: 20**  
**Duration: 60 Min**  
**Maximum Marks: 60**

1. In order to refine 'blister copper', it is melted in a furnace and is stirred with green logs of wood. This process is called poling. The purpose is

- A. to expel the dissolved gases in blister copper
- B. to bring the impurities to the surface and oxidise them
- C. to increase the carbon content of the copper
- D. to reduce the metallic oxide impurities with hydrocarbon gases liberated from the wood

Sol: D

2. The impurity not present in cast iron is

- A.  $\text{SiO}_2$
- B. Si
- C. P
- D. Mn

Sol: A

Sand does not dissolve in molten iron. Si, P and Mn formed due to the reduction of their oxides during smelting dissolve in molten iron and make it impure. Impure iron obtained is called cast iron or pig iron

3. The iron ore mined in Kudremukh was

- A. magnetite which is chemically  $\text{Fe}_3\text{O}_4$
- B. iron pyrites which is chemically  $\text{FeS}_2$
- C. haematite which is chemically  $\text{Fe}_2\text{O}_3$
- D. iron pyrites which is chemically  $\text{FeCO}_3$

Sol: A

4. An ore is found to contain FeO as an impurity. The probable flux to be used is

- A. CO
- B.  $\text{SiO}_2$
- C. CaO
- D.  $\text{P}_2\text{O}_5$

Sol: B

FeO is metal oxide and is basic in nature. So acidic flux, sand ( $\text{SiO}_2$ - silica) is used

5. Aluminium is obtained by

- A. reducing  $\text{Al}_2\text{O}_3$  with coke
- B. electrolysing  $\text{Al}_2\text{O}_3$  dissolved in  $\text{Na}_3\text{AlF}_6$
- C. reducing  $\text{Al}_2\text{O}_3$  with chromium
- D. heating  $\text{Al}_2\text{O}_3$  and cryolite

Sol: B

6. The metal not extracted by smelting is

- A. Cu
- B. Fe
- C. Zn
- D. Mg

Sol: D

Alkali metals, alkaline earth metals and aluminium are obtained by electrometallurgical processes

7. Distribution law holds good if

- A. the solute is soluble in both the solvents which are immiscible
- B. temperature remains constant
- C. no association or dissociation of the solute place in both the solvents
- D. all the above

Sol: D

8. Calcination is used in the metallurgy involving

- A. haematite ore
- B. dolomite ore
- C. malachite ore
- D. all these ores

Sol: D

Oxide ore is mentioned in option 1 while carbonate ores are mentioned in options 2 and 3. Calcination process is used for oxide and carbonate ores.

9. Furnace used for the calcinations of iron ore is

- A. Reverberatory
- B. Blast furnace
- C. Muffle furnace
- D. electric arc furnace

Sol: A

Reverberatory furnace is used for calcination and roasting. Blast furnace for smelting. Electric arc furnace for high temperature processes in industry. Muffle furnace is used in laboratories for high temperature processes

10. Malachite contains

- A. Mg
- B. Cu
- C. Al
- D. Fe

Sol: B

Composition: malachite is  $\text{CuCO}_3 \cdot \text{Cu(OH)}_2$ . Hence metal Cu is present in it

11. Liquation process is used in the purification of

- A. copper
- B. iron
- C. aluminium
- D. lead

Sol: D

Among the four metals lead has a low melting point

12. Thermite process is used to extract metals

- A. when their oxides cannot be reduced by carbon
- B. when their carbonates do not yield oxides by thermal decomposition
- C. when their sulphides cannot be converted into oxides by roasting
- D. when their melting points are very high

Sol: A

13. In the metallurgical processes, furnaces are lined with

- A. silica
- B. haematite
- C. calcined dolomite
- D. lime stone

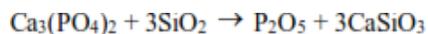
Sol: C

Calcined dolomite is a mixture of CaO and MgO. It is obtained by heating dolomite which is a mixture of carbonates of Ca and Mg. These linings act as heat insulating

14. In the extraction of phosphorus from phosphorite by the electrothermal process, sand acts as

- A. a flux
- B. an oxidising agent
- C. a reducing agent
- D. a fuel

Sol: A



15. Chromium is obtained by reducing purified chromite ore with

- A. red hot coke
- B. gaseous hydrogen
- C. aluminium powder
- D. carbon monoxide

Sol: C

16. Distillation method is used to purify

- A. Hg
- B. Cd
- C. Zn
- D. all the above

Sol: D

Low boiling point metals are purified by distillation. The metal vaporises. The vapours on cooling give pure metal

17. Magnesium is manufactured by electrolysing fused magnesium chloride using

- A. A nickel cathode and a graphite anode
- B. The iron container as cathode and a nickel anode
- C. The iron container as cathode and a graphite anode
- D. The nickel container as cathode and iron anode

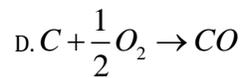
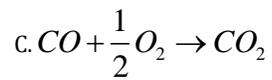
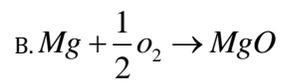
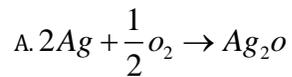
Sol: C

18. A cuprous ore among the following is

- A. malachite
- B. cuprite
- C. azurite
- D. chalcopyrites

Sol : B

19.  $\Delta G^\circ$  Vs T plot in the Ellingham's diagram slopes downwards for the reaction



Sol: D

20. Iron is extracted from haematite ore by reduction with

A. CO

B. Mg

C. Al

D. C

Sol: A