

Date Planned : __ / __ / __	Daily Tutorial Sheet-2	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	JEE Advanced (Archive)	Exact Duration : _____

16. Match the conversions in Column I with the type(s) of reaction(s) given in Column II. Indicate your answer by darkening the appropriate box. (2008)

Column I	Column II
(A) $\text{PbS} \rightarrow \text{PbO}$	(P) roasting
(B) $\text{CaCO}_3 \rightarrow \text{CaO}$	(Q) calcination
(C) $\text{ZnS} \rightarrow \text{Zn}$	(R) carbon reduction
(D) $\text{Cu}_2\text{S} \rightarrow \text{Cu}$	(S) self reduction

- *17. Extraction of metal from the ore cassiterite involves : (2011)
- | | |
|--------------------------------------|--------------------------------------|
| (A) carbon reduction of an oxide ore | (B) self-reduction of a sulphide ore |
| (C) removal of copper impurity | (D) removal of iron impurity |

18. In the cyanide extraction process of silver from argentite ore, the oxidizing and reducing agents used are : (2012)
- | | |
|--|--|
| (A) O_2 and CO respectively | (B) O_2 and Zn dust respectively |
| (C) HNO_3 and Zn dust respectively | (D) HNO_3 and CO respectively |

19. Sulfide ores are common for the metals : (2013)
- | | |
|-------------------|-------------------|
| (A) Ag, Cu and Pb | (B) Ag, Cu and Sn |
| (C) Ag, Mg and Pb | (D) Al, Cu and Pb |

- *20. The carbon-based reduction method is NOT used for the extraction of : (2013)
- | | |
|--|--|
| (A) tin from SnO_2 | (B) iron from Fe_2O_3 |
| (C) aluminium from Al_2O_3 | (D) magnesium from $\text{MgCO}_3 \cdot \text{CaCO}_3$ |



- *21. Upon heating with Cu_2S , the reagent(s) that give copper metal is/are : (2014)
- | | | | |
|----------------------|------------------|---------------------------|---------------------|
| (A) CuFeS_2 | (B) CuO | (C) Cu_2O | (D) CuSO_4 |
|----------------------|------------------|---------------------------|---------------------|

- *22. Copper is purified by electrolytic refining of blister copper. The correct statement(s) about this process is(are) : (2015)

- | |
|--|
| (A) impure Cu strip is used as cathode |
| (B) acidified aqueous CuSO_4 is used as electrolyte |
| (C) pure Cu deposits at cathode |
| (D) impurities settle as anode-mud. |

23. Match the anionic species given in Column I that are present in the ore(s) given in Column II. (2015)

Column I	Column II
(A) Carbonate	(P) Siderite
(B) Sulphide	(Q) Malachite
(C) Hydroxide	(R) Bauxite
(D) Oxide	(S) Calamine
	(T) Argentite

- *24. Extraction of copper from copper pyrites (CuFeS_2) involves : (2017)
- (A) crushing followed by concentration of the ore by froth-floatation
(B) removal of iron as slag
(C) self-reduction step to produce 'blister copper' following evolution of SO_2
(D) refining of 'blister copper' by carbon reduction.
25. Galena (an ore) is partially oxidized by passing air through it at high temperature. After some time, the passage of air is stopped, but the heating is continued in a closed furnace such that the contents undergo self-reduction. The weight (in kg) of Pb produced per kg of O_2 consumed is _____. (2018)
(Atomic weights in g mol^{-1} ; O = 16, S = 32, Pb = 207) 
26. Calamine, malachite, magnetite and cryolite, respectively, are : (2019)
- (A) ZnSO_4 , CuCO_3 , Fe_2O_3 , AlF_3 (B) ZnCO_3 , $\text{CuCO}_3 \cdot \text{Cu}(\text{OH})_2$, Fe_3O_4 , Na_3AlF_6
(C) ZnSO_4 , $\text{Cu}(\text{OH})_2$, Fe_3O_4 , Na_3AlF_6 (D) ZnCO_3 , CuCO_3 , Fe_2O_3 , Na_3AlF_6
- *27. The cyanide process of gold extraction involves leaching out gold from its ore with CN^- in the presence of Q in water to form R. Subsequently, R is treated with T to obtain Au and Z. Choose the correct option(s) :  (2019)
- (A) T is Zn (B) R is $[\text{Au}(\text{CN})_4]^-$
(C) Z is $[\text{Zn}(\text{CN})_4]^{2-}$ (D) Q is O_2