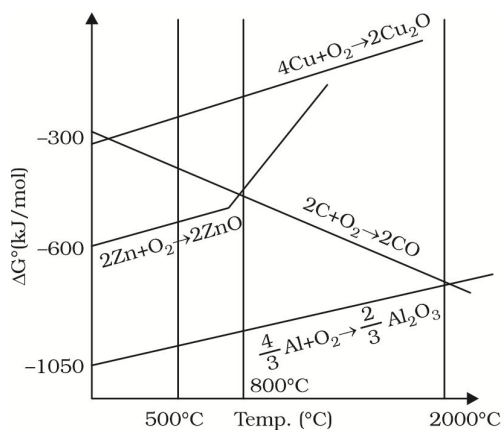


Date Planned : __ / __ / __	Daily Tutorial Sheet-2	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	JEE Main (Archive)	Exact Duration : _____

16. In the leaching method, bauxite ore is digested with concentrated solution of NaOH that produces 'X'. When CO₂ gas is passed through the aqueous solution of 'X', a hydrated compound 'Y' is precipitated. 'X' and 'Y' respectively are : (2018)
- (A) Na[Al(OH)₄] and Al₂O₃ · xH₂O (B) Al(OH)₃ and Al₂O₃ · xH₂O
(C) Na[Al(OH)₄] and Al₂(CO₃)₃ · xH₂O (D) NaAlO₂ and Al₂(CO₃)₃ · xH₂O
17. In the extraction of copper from its sulphide ore, metal is finally obtained by the oxidation of cuprous sulphide with : (2018)
- (A) Cu (B) Cu₂O (C) Fe₂O₃ (D) SO₂
18. The reaction that does not define calcination is : (2019)
- (A) $\text{CaCO}_3 \cdot \text{MgCO}_3 \xrightarrow{\Delta} \text{CaO} + \text{MgO} + 2\text{CO}_2$
(B) $2\text{Cu}_2\text{S} + 3\text{O}_2 \xrightarrow{\Delta} 2\text{Cu}_2\text{O} + 2\text{SO}_2$
(C) $\text{ZnCO}_3 \xrightarrow{\Delta} \text{ZnO} + \text{CO}_2$
(D) $\text{Fe}_2\text{O}_3 \cdot \text{xH}_2\text{O} \xrightarrow{\Delta} \text{Fe}_2\text{O}_3 + \text{xH}_2\text{O}$
19. The ore that contains both iron and copper is : (2019)
- (A) malachite (B) azurite
(C) copper pyrites (D) dolomite
20. The correct statement regarding the given Ellingham diagram is : (2019)



- (A) Coke cannot be used for the extraction of Cu from Cu₂O
(B) At 1400°C, Al can be used for the extraction of Zn from ZnO
(C) At 500°C, coke can be used for the extraction of Zn from ZnO
(D) At 800°C, Cu can be used for the extraction of Zn from ZnO

21. Match the ores (column I) with the metals (column II) :

(2019)

Column I (Ores)		Column II (Metals)	
(1)	Siderite	(P)	Zinc
(2)	Kaolinite	(Q)	Copper
(3)	Malachite	(R)	Iron
(4)	Calamine	(S)	Aluminum

(A) (1) → P ; (2) → Q ; (3) → R ; (4) → S

(B) (1) → Q ; (2) → R ; (3) → S ; (4) → P

(C) (1) → R ; (2) → S ; (3) → Q ; (4) → P

(D) (1) → R ; (2) → S ; (3) → P ; (4) → Q

22. Match the refining methods (Column I) with metals (Column II).

(2019)

Column I (Refining methods)	Column II (Metals)
I. Liquation	(a) Zr
II. Zone Refining	(b) Ni
III. Mond Process	(c) Sn
IV. Van Arkel Method	(d) Ga
(A) (I)-(c); (II)-(a); (III)-(b); (IV)-(d)	(B) (I)-(c); (II)-(d); (III)-(b); (IV)-(a)
(C) (I)-(b); (II)-(c); (III)-(d); (IV)-(a)	(D) (I)-(b); (II)-(d); (III)-(a); (IV)-(c)

23. The ore that contains the metals in the form of fluoride is :

(2019)

- (A) magnetite (B) malachite
(C) sphalerite (D) cryolite

24. With respect to an ore, Ellingham diagram helps to predict the feasibility of its :

(2019)

- (A) Thermal reduction (B) Electrolysis
(C) Zone refining (D) Vapour phase refining

25. The idea of froth floatation method came from a person X and this method is related to the process Y of ores. X and Y, respectively, are :

(2019)

- (A) washer man and reduction (B) fisher woman and concentration
(C) washer woman and concentration (D) fisher man and reduction

26. The correct statement is :

(2019)

- (A) the Hall-Heroult process is used for the production of aluminium and iron
(B) leaching of bauxite using concentrated NaOH solution gives sodium aluminate and sodium silicate
(C) the blistered appearance of copper during the metallurgical process is due to the evolution of CO_2
(D) pig iron is obtained from cast iron

27. The correct statement is : (2019)
 (A) Aniline is a froth stabilizer
 (B) Zincite is a carbonate ore
 (C) Zone refining process is used for the refining of titanium
 (D) Sodium cyanide cannot be used in the metallurgy of silver
28. The one that is not a carbonate ore is: (2019)
 (A) bauxite (B) malachite (C) siderite (D) calamine
29. **Assertion :** For the extraction of iron, haematite ore is used. (2019)
Reason : Haematite is a carbonate ore of iron
 (A) Only the assertion is correct
 (B) Both the assertion and reason are correct and the reason is the correct explanation for the assertion
 (C) Only the reason is correct
 (D) Both the assertion and reason are correct, but the reason is not the correct explanation for the assertion
30. The Mond process is used for the: (2019)
 (A) extraction of Zn (B) purification of Zr and Ti
 (C) purification of Ni (D) extraction of Mo
31. The refining method used when the metal and the impurities have low and high melting temperatures, respectively, is: (2020)
 (A) distillation (B) liquation
 (C) zone refining (D) vapour phase refining
32. Among the reactions (a) – (d), the reaction(s) that does/do not occur in the blast furnace during the extraction of iron is/are: (2020)
 (a) $\text{CaO} + \text{SiO}_2 \longrightarrow \text{CaSiO}_3$ (b) $3\text{Fe}_2\text{O}_3 + \text{CO} \longrightarrow 2\text{Fe}_3\text{O}_4 + \text{CO}_2$
 (c) $\text{FeO} + \text{SiO}_2 \longrightarrow \text{FeSiO}_3$ (d) $\text{FeO} \longrightarrow \text{Fe} + \frac{1}{2}\text{O}_2$
 (A) (c) and (d) (B) (d) (C) (a) (D) (a) and (d)
33. According to the following diagram, A reduces BO_2 when the temperature is: (2020)
 (A) $> 1200^\circ\text{C}$ but $< 1400^\circ\text{C}$
 (B) $< 1200^\circ\text{C}$
 (C) $> 1400^\circ\text{C}$
 (D) $< 1400^\circ\text{C}$
-
34. The purest form of commercial iron is: (2020)
 (A) Scrap iron and pig iron (B) Wrought iron
 (C) Pig iron (D) Cast iron