**MASTERS PRE-UNIVERSITY COLLEGE, HASSAN 573201.**

**CHEMISTRY II-PUC PRACTICE PAPER METALLURGY**

1.**NaCN is somethimes added in the froth flotation process as a depressant when ZnS and PbS minerals are expectd**

**because**

a)Pb(CN)2 is precipitated while no effect on ZnS.

b)ZnS forms soluble complex Na2[Zn(CN)4] while PbS forms froth

c)PbS forms soluble complex Na2[Pb(CN)4] while ZnS forms froth.

d)NaCN is never added in froth floatation process.

1. **Which of the following statements is incorrect?**

a)Cassiterite and haematite are concentrated by hydraulic washing.

b)Pure Al2O3 is obtained from the bauxite ore by leaching in the Bayer’s process.

c)Sulphide ore is concentrated by Calcination method

d)Roasting can convert sulphide into oxide and part of sulphide may also act as a reducing agent.

1. **Select correct statement**

a)In the decomposition of an oxide into oxygen and gaseous metal, entropy increases

b)Decomposition of an oxide is an endothermic change

c)To make negative, temperature should be high enough so that T

d)All are correct statements.

1. **Which of the following metals is obtained by the self reduction process?**

a)Copper b)Tin c)Gold d)Magnesium.

1. **Identify the metal M whose extraction is based on the following reactions?**

MS + 2O2 MSO4 2MS + 3O2 2MO + 2SO2

MS + 2MO3M +SO2 MS+MSO42M+2SO2

a)zinc b)aluminium c)lead d)silver.

1. **In the electrolytic reduction of fused mixture of Al2O3 and Na3AlF6 gas liberated at graphite anode is :**

a)F2 b)OF2 c)O2 d)O3

1. **Match the purification processes given in List-I with the metal(s) given in List-II and select the correct answer using the codes given below:**

**Column-I Column-II**

A. Poling p.Titanium

B. Cupellation q.Copper

C. Distilation r.Silver

D. Van Arkel method s.Zinc.

Codes: A B C D A B C D

1. p q r s b) q p s r
2. s r q p d) q r s p
3. **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?**

a)CO2 is thermodynamically more stable than CS2

b)Metal sulphides are less stable than the corresponding oxides

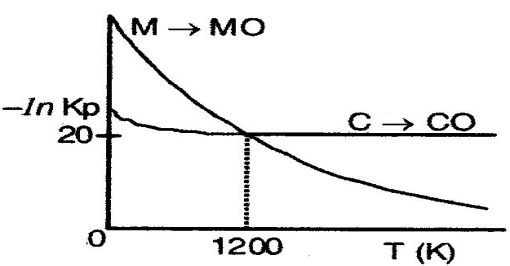
c)CO2 is more volatile than CS2

d)Metal sulphides are thermodynamically more stable than CS2.

1. **Calamine is an ore of:**

a)Zinc b)Aluminium c)Iron d)Copper.

1. **The plot shows the variation of –In Kp versus temperature for the two reactions.**

** and**

**Identify the correct statement:**

a)At T>1200K, carbon will reduce MO(s) to M(s)

b)At T<1200K, oxidation of carbon is unfavourable

c)Oxidation of carbon is favourable at all temperatures

d)At T<1200K,the reaction MO(s)+C(s)M(s)+CO(g) is spontaneous

1. **Which of the following ore contains both Fe and Cu?**

a)Chalcopyrite b)Malachite c)Cuprite d)Azurite

1. **The methods chiefly used for the extraction of lead and tin from their ores are respectively.**

a)self-reduction and carbon respectively b)carbon reduction and self-reduction

c)cyanide process and carbon reduction d)none of these.

1. **An ore of tin containing FeCr2O4 is concentrated by**

a)magnetic separation b)froth floatation c)leaching method d)gravity separation.

1. **Match column I with column II and select the correct answer using the codes give below the lists:**

**Column I Column II**

**I.Cyanide process 1. Ultra pure Ge**

**II.Froth floatation process 2.Pine oil**

**III.Electrolytic reduction 3.Extraction of Al**

**IV.Zone refining 4.Extraction of Au.**

a)I-3,II-1,III-4,IV-2 b)I-4,II-2,III-3,IV-1 c)I-3,II-1,III-3,IV-2 d)I-4,II-1,III-3,IV-2

1. **Leaching of Ag2S is carried out by heating it with a dilute solution of :**

a)NaCN only b)HCI c)NaOH d)NaCN in presence of O2

1. **Thermite process is used to extract metals**

a)when their oxides can’t be reduced by carbon

b)when their carbonates do not yield oxides by thermal decomposition

c)When their sulphides can’t be converted into oxides by roasting

d)when their melting points are very high.

1. **In the extractive metallurgy of iron, the highest temperature in the blast furnance is found:**

a)in the upper most part where reduction takes place

b)in the lower part where fusion takes place

c)in the middle part where slag formation takes place

d)in the lower most part where combustion of carbon takes place.

1. **Which of the following statement(s) is (are) in correct?**

a)In Serpeck’s process silica is removed by heating the bauxite to 1800 with coke in a current of N2

b)In extraction of lead from galena roasting and self reduction takes place in the same furnance but under different conditions of temperature and supply of air.

c)the tin is obtained by the carbon reduction of black tin. d)None.

1. **Reduction of a metal oxide by excess carbon at high temperature is a method for the commercial preparation of some metals. This method can be successfully applied in the case of**

a)BeO and Al2O3 b)ZnO and Fe2O3 c)CaO and Cr2O3 d)BaO and U3O8.

1. **The major role of fluorspar (CaF2) which is added in small quantity in the electrolytic reduction of alumina dissolved in fused cryolite (Na3AlF6) is**

**1)as a catalyst 2)to make the fused mixture very conducting**

**3)to lower the temperature of melting 4)to decrease the rate of oxidation of carbon at the anode.**

a)2,3 b)1,2 c)2,3,4 d)3,4

1. **An ore after levigation is found to have basic impurities. Which of the following can be used as a flux?**

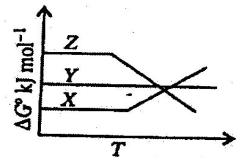
a)MgO b)CaCO3 c)SiO2 d)FeO.

1. **The following equation represents a method of purification of nickel by,**

Ni + 4CO Ni(CO)4 Ni + 4CO

Impure pure

a)Cupellation b)Mond’s process c)Van Arkel method d)Zone refining.

1. **In the following Ellingham diagram X, Y and Z represents graph for metal oxides. Select correct option**
2. Y-will reduce oxide Z. b)Y will reduce oxide X
3. Z will reduce oxide X d)Z will reduce oxide Y.
4. **Bauxite, an ore of aluminium contains impurities except**

a)Fe2O3 b)SiO2 c)CuO d)TiO2.

1. **Vapour phase refining is used for the purification of Ti because**

a)impurities are more soluble in the molten state than in the solid state of the metal.

b)low melting Ti can be made to flow on a sloping surface

c)of formation of volatile TiI4 which decomposed to extra pure Ti on heating at high temperature

d)none of these

1. **Semiconductors of very high purity are obtained by**

a)liquation b)vapour phase refining c)zone refining d)electrolysis.

1. **Select the true statement.**

a)Below 710 , C is better reducing agent than CO b)Below 710, CO is better reducing agent than C

c)Below 710, CO is an oxidizing agent d)Below 710, CO2 is reducing agent.

1. **In the extraction of copper from its sulphide ore, the metal is finally obtained by the reduction of cuprous oxide with**

a)Carbon monoxide b)copper (I) sulphide c)sulphur dioxide d)iron (II) sulphide.

1. **Roasting of sulphides gives the gas X as a byproduct. This is a colourless gas with choking smell of burnt sulphur and causes great damage to respiratory organs as a result of acid rain. Its aqueous solution is acidic, acts as a reducing agent and its acid has never been isolated. The gas X is**

a) CO2 b)SO3 c)H2S d)SO2.

1. **The metal oxide which cannot be reduced to metal by carbon is**

a)Al2O3 b)PbO c)ZnO d)Fe2O3.