

CHEMISTRY

BOOKS - OSWAAL PUBLICATION CHEMISTRY (KANNADA ENGLISH)

GENERAL PRINCIPLES AND PROCESSES OF ISOLATION OF ELEMENTS

Topic 1 Very Short Answer Type Questions

1. Name the method used for refining of zirconium.



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2. Metals having low melting point are refined by....



3. Which type of ore is concentrated by froth-floatation?



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4. Name the process usually employed for the purifacation of -Nickel.



5. Name the refining method used to produce semiconductors.



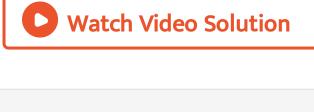
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6. Name the principle involved in the desilverisation of lead by Parke's process.



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7. What is metallic bond?



8. What are the minerals?



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9. What are ores?



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10. What is meant by pyrometllurgy?



11. What is electrometallurgy?



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12. What is liquation?



13. Name one method for the refining of zinc or spelter.



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Topic 1 Short Answer Type Questions

1. With the help of Ellingham diagram explain why silver oxide can be decomposed at a relatively lower temperature.



2. Draw the Ellingham diagram for the formation of carbon monoxide with the increase in temperature?



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3. Giving examples differentiate between 'roasting' and 'calcination'



4. What should be the considerations during the extraction of metals by electrochemical method?



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5. What is the role of flux in metallurgical processes?



6. How are the metals used as semiconductor, refined? What is the principle of the method used?



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7. What is slag?



8. Copper can be extracted by hydrometallurgy but not zinc. Explain.



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9. What is the role of depressant (NaCN) in Froth-Flotation method?



10. Explain with equation Van-Arkel method for refining of zircnium.



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Topic 1 Long Answer Type Questions I

1. On the basis of Ellingham's diagram explain the principle of extraction of iron from its oxide ore.



2. Explain with equation Van-Arkel method for refining of zircnium.



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3. Describe parke's process of desilverisation of lead.



- **4.** Outline the principles of refining metals by the following methods :
- (i) Zone refining
- (ii) Electrolytic refining
- (iii) Vapour phase refining



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5. Differentiate between 'minerals' and 'ores'.



6. Explain hydraulic washing used for ore concentration.



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7. How is cast iron different form pig iron?



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Topic 2 Very Short Answer Type Questions

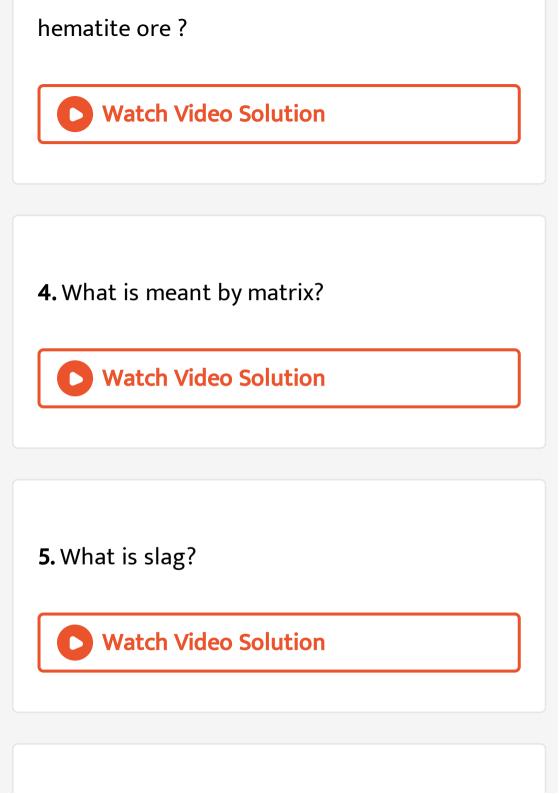
1. The composition of .copper matte. is,



2. Name the depressant used in separation of ZnS from PbS by froth floatation process.



3. What is the role of lime stone in the extraction of iron from the concentrated



6. Name the slag formed in the extraction of iron/copper.



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7. Name a metal which can be obtained by pyrometallurgy / hydrometallurgy electrometallurgy.



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8. Give one important ore of aluminium.



9. Name the calcium salt formed in the blast furnace during smelting of haematite ore.



10. What is the percentage of carbon in : cast iron, wrought iron and steel?



11. What type of ore are roasted?



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12. Name the reducing agent uses in alumino thermite process.



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13. Give the formula of (a) haematite (b) magnetite.

14. Name the method by which Na, K, Mg and Al Can be extracted.



15. Name the metal present in (a) chlorophyll(b) haemoglobin.



16. Name the element present in sea-weeds.

17. Give the composition of dolomite.

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18. State the role of silica in the metallurgy of Copper.



Topic 2 Short Answer Type Question I

1. Suggest any two methods to prevent corrosion of iron.



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2. What is the role of lime stone and coke in the extraction of iron using blast furnace?



3. Give reasons:

(i) Copper displaces silver from silver nitrate solution.



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4. Give reason : Copper is more electro positive than silver.



5. Copper is a stronger reducing agent than silver.



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6. SRP of copper is less than that for silver.



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7. Iron pipe are usually coated with zinc.



8. With the help of Ellingham diagram, explain why Al can reduce MgO at high temperature.



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9. Why copper matte is put in silica lined converter?



10. What is the role of cryolite in the metallurgy of aluminium?



11. Give any three uses of copper.



12. Give any two uses of zinc.



13. How is wrought iron prepared from cast iron?



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14. Give any two uses of iron.



15. Explain the extraction of zinc from zinc oxide or from zinc blende (ZnS).



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Topic 2 Long Answer Type Questions I

1. How copper is refined by electrolytic method?



2. How is pure alumina obtained from bauxite by leaching process.



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3. Describe the three steps involved in the leaching of bauxite to get pure alumina (equations not expected).



4. In the extraction of Aluminium by Hall-Herault process:

Give the equation of overall cell reaction.



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- **5.** (a) Name the reducing agent used in the extraction of zinc oxide. Give the equation.
- (b) What is the principle involved in zone refining of metals?



6. Draw labelled diagram of Hall-Heroult electrolytic cell for the extraction of aluminium write anode and cathode reactions.



- **7.** (i) Draw a neat labelled diagram of blast furnace used for the extraction of iron and mention different zones.
- (ii) What is the role of coke and lime stone during the extraction of cast iron?

8. (a) Write chemical reactions taking place in the blast furnace at reduction zone, slag formation zone and combustion zone during the extraction of Iron.



9. Draw Ellingham diagram $[\Delta G^{\circ} VsT]$ for the oxidation of carbon monoxide and for the

formation of Fe_2O_3 and CO. Suggest suitable reducing agents for the reduction of Fe_2O_3 at a temperature below 983 K $(710^{\circ}\,C)$ and at a temperature above 983 K.



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10. Draw a neat diagram of blast furnance and describe and describe the reaction that occurs during extraction of cast iron in furnace at.

(i) $600^{\circ}C$

(ii) $900^{\circ}C - 1000^{\circ}C$.

11. State the role of silica in the metallurgy of Copper.



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12. The value of $\Delta_f G^\circ$ for formation Cr_2O_3 is -540 kJ $mol^{\,-1}$ and that of Al_2O_3 is -827 kJ mol^{-1} . Is the reduction of Cr_2O_3 possible with aluminium?



13. The choice of a reducing agent in a particular case depends on thermodynamic factor. How far do you agree with this statement? Support your opinion with example.



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Topic 2 Long Answer Type Questions Ii

1. Predict conditions under which Al might be expected to reduce MgO.



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2. How is the aluminium extracted from bauxite.

