CHEMISTRY

BOOKS - MODERN PUBLICATION

GENERAL PRINCIPLES AND PROCESSES OF ISOLATION OF ELEMENTS

Example

1. In genral, which metals do you expect to occur in native state in nature ? Give examples.

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2. Why do metal sulphides occur mainly in rocks and metal halides occur mostly in lakes and seas ?

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3. Name two examples of the following types of ores : Oxides .

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4. Name two examples of the following types of ores : Sulphides .

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5. Name two examples of the following types of ores :

Carbonates .

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6. Name two examples of the following types of ores :

Silicates.

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7. How does sodium cayanide act as depressant in preventing ZnS from forming the froth ?

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8. What is flux ? How is it useful ?

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9. Out of C and CO, which is a better reducing agent for ZnO ?

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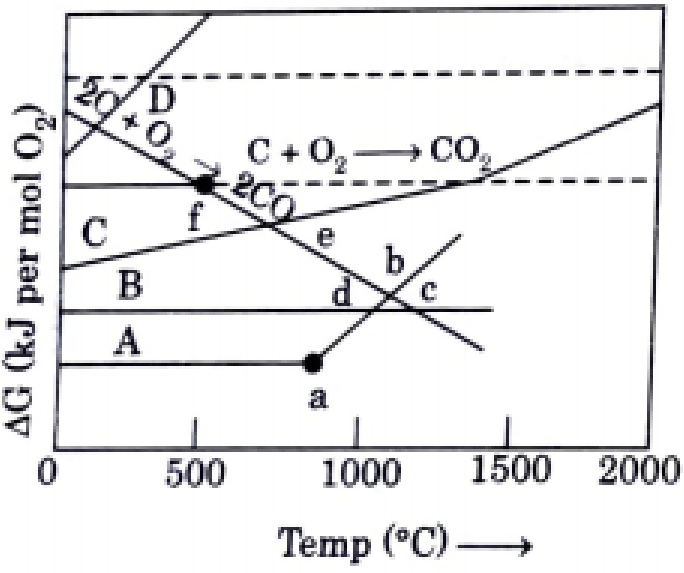
10. A part of Ellingham diagram for some metal oxides (based upon 1 mole of O_2) and carbon is shown.



In figure A, B, C and D represent curves for metal oxides and a, b, c, d, e and f are temperatures. Answer the following : Will B oxide reduce metal oxide of A or C or both ?

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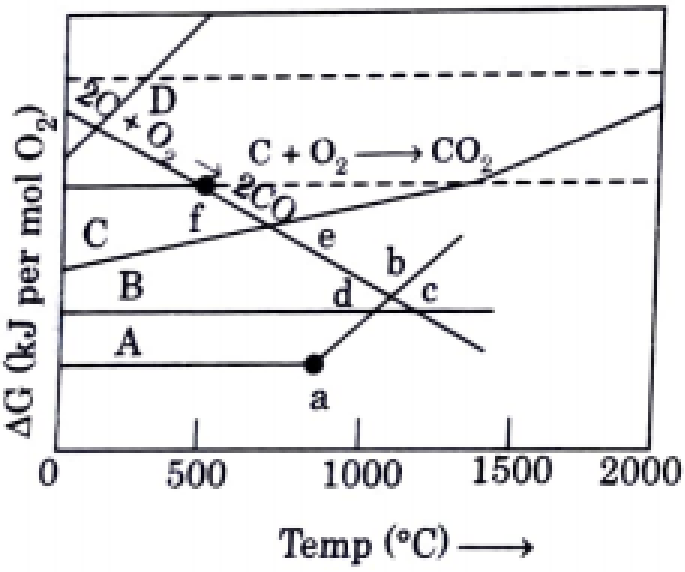
11. A part of Ellingham diagram for some metal oxides (based upon 1 mole of O_2) and carbon is shown.



In figure A, B, C and D represent curves for metal oxides and a, b, c, d, e and f are temperatures. Answer

the following : Which metal can be reduced thermally ?

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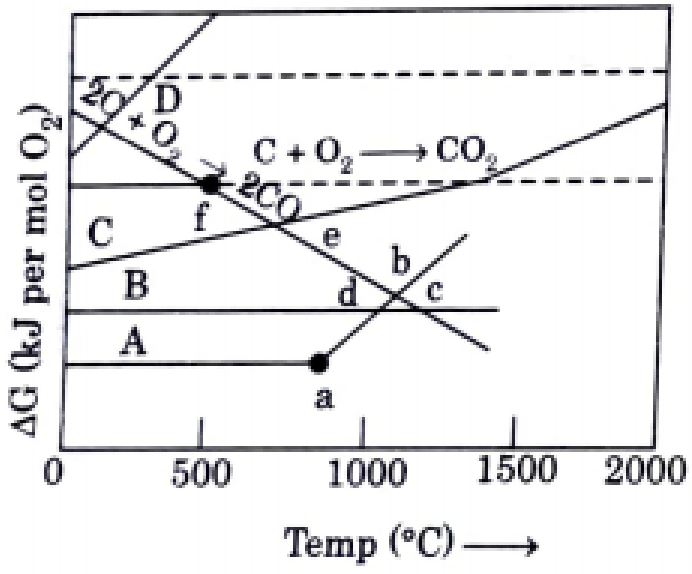
12. A part of Ellingham diagram for some metal oxides (based upon 1 mole of O_2) and carbon is shown.



In figure A, B, C and D represent curves for metal oxides and a, b, c, d, e and f are temperatures. Answer the following : Will oxide of B be reduced by coke above temperature c or below temperature c ?

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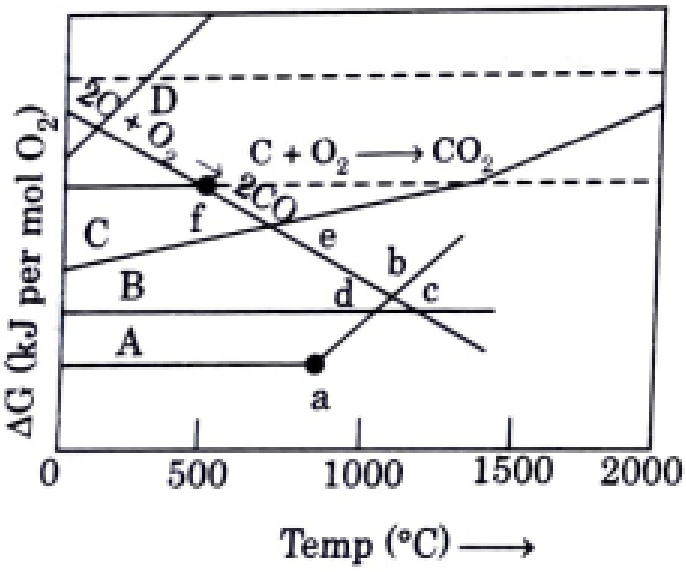
13. A part of Ellingham diagram for some metal oxides (based upon 1 mole of O_2) and carbon is shown.



In figure A, B, C and D represent curves for metal oxides and a, b, c, d, e and f are temperatures. Answer the following : Will the formation of CO or CO_2 be preferred above temperature f ?

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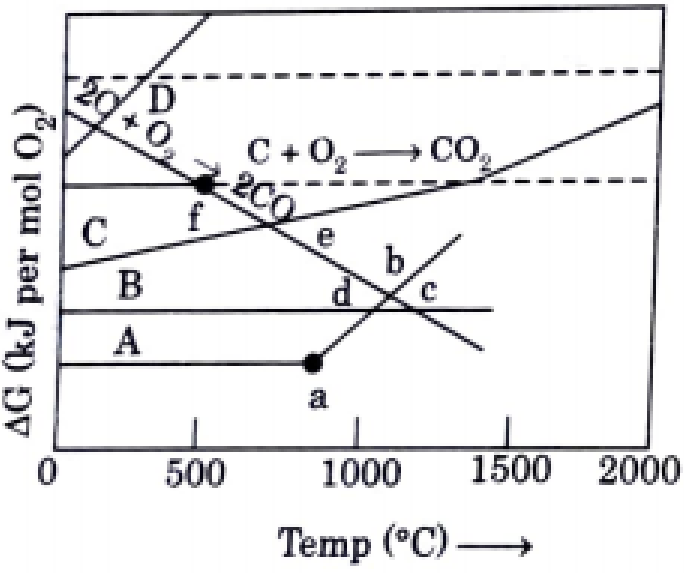
14. A part of Ellingham diagram for some metal oxides (based upon 1 mole of O_2) and carbon is shown.



In figure A, B, C and D represent curves for metal oxides and a, b, c, d, e and f are temperatures. Answer the following : What does temperature â€˜aâ€™ represent ?

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

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16. Free energies of formation $\left(\Delta_f G\right)$ of MgO (s) and CO(g) at 1273 K and 2273 K are given below $\left(\Delta_f G\right)[MgO(s)] = -941 kJ/mol at 1273 K$(Delta_f G) [MgO (s)] = -314kJ//mol at 2273K $\left(\Delta_f G\right)[CO(g)] = -439 kJ/mol at 1273 K$(Delta_f G) [CO (g)] = - 628 kJ //mol at 2273 K On the basis of

above data, predict the temperature at which carbon can be used as a reducing agent for MgO (s) .

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17. The value of rG for formation of Cr_2O_3 is - 540 kJmol and that of $Al_2O_3 is -827 kJmol^{-1}$ Is the reduction of Cr_2O_3 possible with Al ?

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18. Why is the reduction of a metal oxide easier if the metal formed is in liquid state at the temperature of

reduction?

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19. At a site, low grade copper ores are available and zinc and iron scraps are also available. Which of the two scraps would be more suitable for reducing the leached copper ore and why?

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20. Give one example of the following : Acidic flux.

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21. Give one example of the following : Basic flux .

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22. What happens when Cu_2O undergoes self reduction in a silica line converter .

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23. What happens when Haematite oxidises carbon to carbon monoxide.

Watch Video Solution

24. Although thermodynamically feasible, in practice, magnesium metal is not used for the reduction of alumina in the metallurgy of aluminium. Why ?

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25. Explain the following : Why is zinc and not copper used for the recovery of silver from the complex $[Ag(CN_2)]^-$?

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26. Explain the following : The extraction of Au by leaching with NaCN involves both oxidation and reduction. Justify giving equations.

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27. Explain the following : Lime stone is used in the manufacture of pig iron from haematite. Why?

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28. Which method of refining is generally used when a metal of high degree of purity is needed?

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29. Name the metal used as a reducing agent in aluminothermic process.

Watch Video Solution

30. What is basic difference between calcination and roasting ?

Watch Video Solution

31. Which is the cheapest and most abundant reducing agent which is used in the extraction of metals?

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32. Why does CaO react with SiO_2 to form a slag ?

Watch Video Solution

33. Why is the formation of sulphate in calcination sometimes advantageous ?

Watch Video Solution

Watch Video Solution

34. Why cannot aluminium be reduced by carbon ?

Watch Video Solution

35. How does NaCN act as a depressant in preventing ZnS from forming the froth ?

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36. Which is better reducing agent at temperature 983 K, C or Co?

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37. Fill in the blanks- _____ is the other name of concentrated sulphuric acid.

Watch Video Solution

38. Which metals are generally extracted by electrolytic process? Which positions these metals generally occupy in the periodic table ?

Watch Video Solution

39. What is the composition of copper matte?

Watch Video Solution

40. What is cupellation ?

Watch Video Solution

41. What type of ores are roasted?

Watch Video Solution

42. How is granular zinc obtained ?

Watch Video Solution

43. What is Kroll process ?

Watch Video Solution

44. The iron produced in the blast furnace is called ..... .

Watch Video Solution

45. What is the role of a stabilizer in froth floatation process ? Give examples.

Watch Video Solution

46. Fill in the blanks- Oil of vitriol is the name for_____.

Watch Video Solution

47. Fill in the blanks- Concentrated sulphuric acid is also known as _____.

Watch Video Solution

48. An ore sample of galena (PbS) is contaminated with zinc blende (ZnS). Name one chemical which can be used to concentrate galena selectively by froth floatation method.

Watch Video Solution

49. Name the method used for refining of Nickel.

Watch Video Solution

50. Name the method used for refining of Zirconium.

Watch Video Solution

51. Fill in the blanks- When green vitriol is heated, an oily viscous fluid is formed which is commonly known as _____.

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52. State whether the statement is true or false- Concentrated sulphuric acid is also known as Oleum.

Watch Video Solution

53. Which chemical compound has the commercial name- Bauxite?

Watch Video Solution

54. Fill in the blanks- _____ is the commercial name for hydrated alumina.

Watch Video Solution

55. Explain the method of froth floatation process of concentrating sulphide ore.

Watch Video Solution

56. Write down the reactions taking place in different zones in the blast furnace during the extraction of iron.

Watch Video Solution

57. Why can't aluminium be reduced by carbon ?

Watch Video Solution

58. What is flux?

Watch Video Solution

59. What is bauxite? what are its two uses?

Watch Video Solution

60. Fill in the blanks- _____ is the ore from which aluminium metal is extracted.

Watch Video Solution

61. Fill in the blanks- Horn silver is the commercial name for_____

Watch Video Solution

Watch Video Solution

62. In the extraction of Al, impure Al_2O_3 is dissolved in conc. NaOH to form Sodium aluminate and leaving impurities behind. What is the name of the process.

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63. Fill in the blanks- Cerargyrite is also known as_____.

Watch Video Solution

64. Fill in the blanks- Silver metal is extracted from an ore called as_____.

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65. Answer the following question- From which ore is silver metal extracted?

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66. Which of the ores mentioned in Table 6.1 can be concentrated by magnetic separation method?

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Watch Video Solution

67. what are the uses of milk of magnesia?

Watch Video Solution

68. Fill in the blanks- _____ is the chemical compound used for treatment of constipation, heart burn and indigestion.

Watch Video Solution

69. State whether the statement is true or false- Aquaregia is a mixture of sulphuric acid and hydrochloric acid.

Watch Video Solution

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

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71. What is the role of depressant in froth flotation process ?

Watch Video Solution

72. Why is the extraction of copper from pyrites more difficult than that from its oxide ore through reduction?

Watch Video Solution

73. Outline the principles involved in the following methods of refining of metals.

Zone refining.

Watch Video Solution

74. Out of C and CO, which is a better reducing agent for ZnO ?

Watch Video Solution

75. Name the common elements present in the anode mud in electrolytic refining of copper. Why are they so present ?

Watch Video Solution

76. Write down the reactions taking place in different zones in the blast furnace during the extraction of

iron.

Watch Video Solution

77. Write chemical reactions taking place in the extraction of zinc from zinc blende.

Watch Video Solution

78. State the role of silica in the metallurgy of copper.

Watch Video Solution

79. What is meant by the term “chromatography”?

Watch Video Solution

80. What criterion is followed for the selection of the stationary phase in chromatography?

Watch Video Solution

81. Describe the method of refining of nickel.

Watch Video Solution

82. How can you separate alumina from silica in a bauxite ore associated with silica? Give equations, if any.

Watch Video Solution

83. Giving examples, differentiate between roasting and calcination.

Watch Video Solution

84. How is Cast iron different from Pig iron ?

Watch Video Solution

85. What is difference between minerals and ores?

Watch Video Solution

86. Why copper matte its put in silica lined converter ?

Watch Video Solution

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

Watch Video Solution

88. How is leaching carried out in case of low grade copper ores ?

Watch Video Solution

89. Why is zinc not extracted from zinc oxide through reduction using CO?

Watch Video Solution

90. The value of rG for formation of Cr_2O_3 is - 540 kJmol and that of $Al_2O_3 is -827 kJmol^{-1}$ Is the reduction of Cr_2O_3 possible with Al ?

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91. What is the commercial name of Silver nitrate?

Watch Video Solution

92. 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 two examples.

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93. Name the process from which chlorine is obtained as a by-product. What will happen if an aqueous solution of NaCl is subjected to electrolysis?

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94. What is the role of graphite in the electrometallurgy of aluminium ?

Watch Video Solution

95. What is the principle of zone refining ?

Watch Video Solution

96. Outline the principle of refining of metals by electrolytic refining.

Watch Video Solution

97. Outline the principles involved in the following methods of refining of metals.

Vapour phase refining.

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

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99. Why is an external emf of more than 2.2V required for the extraction of Cl_2 from brine ?

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100. At temperatures above 1073K coke can be used to reduce FeO to Fe. How can you justify this reduction with Ellingham diagram?

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101. Wrought iron is the purest form of iron. Write a reaction used for the preparation of wrought iron from cast iron. How can the impurities of sulphur, silicon and phosphorus be removed from cast iron ?

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102. How is copper extracted from low grade copper ores ?

Watch Video Solution

103. Write two basic requirements for refining of a metal by Mond process and by Van Arkel Method.

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104. Although carbon and hydrogen are better reducing agents but they are not used to reduce metallic oxides at high temperatures. Why ?

Watch Video Solution

105. Explain the method of froth floatation process of concentrating sulphide ore.

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106. The purest form of iron is prepared by oxidising impurities from cast iron in a reverberatory furnace. Which iron ore is used to line the furnace? Explain by giving reaction.

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107. The mixture of compounds A and B is passed through a column of Al_2O_3 by using alcohol as eluant . Compound A is eluted in preference to compound B. Which of the compounds A or B, is more readily adsorbed on the column?

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108. Why is sulphide ore of copper heated in a furnace after mixing with silica ?

Watch Video Solution

109. Why are sulphide ores converted to oxide before reduction ?

Watch Video Solution

110. Which method is used for refining Zr and Ti? Explain with equation.

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

Watch Video Solution

Watch Video Solution

112. What is flux?

Watch Video Solution

113. A chemical compound is used to heal remove the harmful tissues in the wounds and to remove warts from the skin. What is the name of that compound?

Watch Video Solution

114. Write down the reactions taking place in different zones in the blast furnace during the extraction of iron.

Watch Video Solution

115. Give two requirements for vapour phase refining.

Watch Video Solution

116. Write the chemical reactions involved in the extraction of gold by cyanide process. Also give the role of zinc in the extraction.

Watch Video Solution

117. Give an appropriate answer for the following statement- Electric heaters, toasters, dental restoration equipments are made up-

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118. Why the graphite rods in the extraction of aluminium from molten Al_2O_3 have to be replaced from time to time ?

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119. Mixture of concentrated HNO_3 and concentrated HCl makes a powerful solution in which precious metal gold is dissolved. Name the solution which is formed?

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120. Galena (PbS) and cinnabar (HgS) on roasting often give their respective metals but zinc blende (ZnS) does not. Explain.

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121. Graphite is commonly used as an anode but not diamond. Give reason.

Watch Video Solution

122. Why are sulphide ores converted to oxide before reduction ?

Watch Video Solution

123. Thermite process is quite useful for repairing broken parts of machines. Explain.

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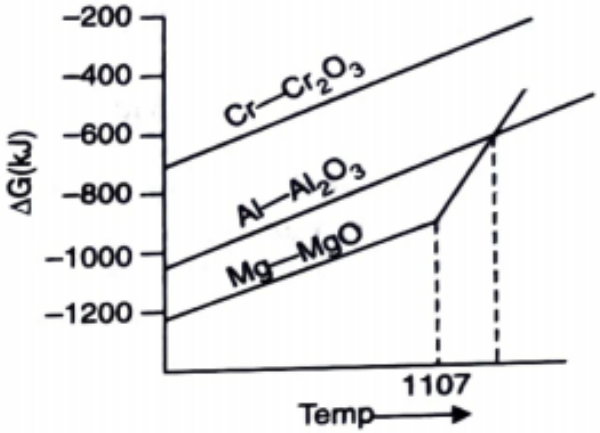
Watch Video Solution

124. The extraction of gold by leaching with NaCN involves both oxidation and reduction. Justify giving equation .

Watch Video Solution

125. A part of Ellingham diagram is shown below :



Will Cr_2O_3 be reduced by Al or not ?

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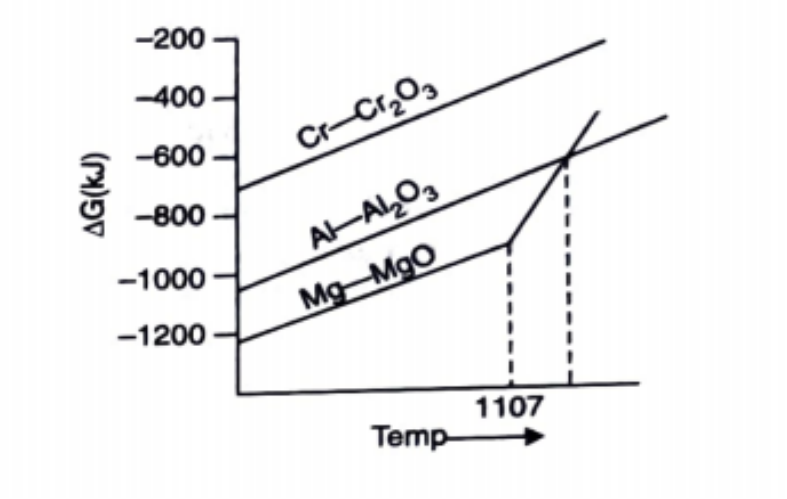
126. A part of Ellingham diagram is shown below :



Suggest a condition under which magnesium could reduce aluminium.

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127. In the metallurgy of copper partial roasting of sulphide ore is done. Why ?

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Exercise

1. True of False : Copper is found both in free as well as in combined state in nature.

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2. True of False : All minerals are ores put all ores cannot be minerals.

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3. True of False : The minerals siderite, magnetite and haematite contain iron.

Watch Video Solution

4. True of False : Flux combines with slag to form gangue.

Watch Video Solution

Watch Video Solution

5. True of False : In calcination, the ore is heated with calcium.

Watch Video Solution

6. True of False : Silver is extracted by by hydrometallurgy.

Watch Video Solution

7. Zone refining is used for the

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8. True of False : The metals Ag, Au and Hg are extracted by pyrometallurgy .

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9. Chromium steel is the mixture of-

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10. Which of the following reagents can be used to convert acetamide into methanamine?

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11. Complete the missing links : The earthly and silicious impurities which generally occur with ores are called .....

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12. The most abundant element in the earth's crust is:

Watch Video Solution

13. Purest form of iron is

Watch Video Solution

14. State whether the statement is true or false- Lunar caustic is the commercial name of zinc sulphide.

Watch Video Solution

15. Zirconium is best refined by ..... method.

Watch Video Solution

16. In blast furnace, iron oxide is reduced by

Watch Video Solution

17. Nichrome metal alloy is a mixture of-

Watch Video Solution

18. The naturally occurring chemical substances in the form of which metal occur in the earth alongwith impurities are called .....

Watch Video Solution

19. Copper can be extracted from

Watch Video Solution

20. Fill in the blanks- _____alloy is made up of 14% of manganese and 85% of iron.

Watch Video Solution

21. Sulphide ores are concentrated by froth floatation process.

Watch Video Solution

22. Copper can be extracted from

Watch Video Solution

23. Choose the correct alternative : Pine oil is added in froth floatation method because it increases the non-wettability/ wettability of the mineral particles.

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24. Bell metal alloy is the mixture of-

Watch Video Solution

25. Give appropriate answer of the given statement- Which alloy is made up of a mixture of copper, zinc and tin?

Watch Video Solution

26. Which is better reducing agent at temperature 983 K, C or Co?

Watch Video Solution

27. Give appropriate answer for the following question- Solder is a mixture of-

Watch Video Solution

28. Substances which convert infusible impurities Present in ores into fusible substances during smelting are called slags / fluxes.

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29. In the electrorefining of copper,some gold is deposited as:

Watch Video Solution

30. Collect the melting point of

Ice

Watch Video Solution

31. Calcination is the process of converting an ore into its oxide by heating it in the limited /excess air.

Watch Video Solution

32. Haematite is Fe_2O_3 / Fe_3O_4.

Watch Video Solution

33. What is a mineral ? How does it differ from an ore ?

Watch Video Solution

34. State and explain the terms flux and slag.

Watch Video Solution

35. Give the formula of the ores : haematite and bauxite.

Watch Video Solution

36. Important ore of zinc is

Watch Video Solution

37. Give two ores of aluminium.

Watch Video Solution

38. What is meant by native metal ? Name two metals which occur in native state.

Watch Video Solution

39. What is a depressant ? Give one example.

Watch Video Solution

40. Define aluminothermy.

Watch Video Solution

41. What is the principle of chromatographic separation ? Name the different types of chromatography commonly used.

Watch Video Solution

42. What type of ores are roasted?

Watch Video Solution

43. Whichmethodof refining is used whena metal of high degree of purity is needed ?

Watch Video Solution

44. Name the sulphide ores of (i) zinc (ii) lead .

Watch Video Solution

45. Out of C and CO, which is a better reducing agent for ZnO ?

Watch Video Solution

46. Sulphide ores are concentrated by froth floatation process.

Watch Video Solution

47. Write reduction reaction occurring in the blast furnace in the metallurgy of iron at 900-1500 K.

Watch Video Solution

48. What are ores? Name one sulphide ore.

Watch Video Solution

49. Why can't aluminium be reduced by carbon ?

Watch Video Solution

50. State the role of silica in the metallurgy of copper.

Watch Video Solution

51. What is the role of depressant in froth flotation process ?

Watch Video Solution

52. What is the principle of zone refining ?

Watch Video Solution

53. What is the role of graphite in the electrometallurgy of aluminium ?

Watch Video Solution

54. Give an important ore of each of Zinc and Magnesium.

Watch Video Solution

55. What is the composition of copper matte?

Watch Video Solution

56. Define calcination.

Watch Video Solution

57. Define roasting.

Watch Video Solution

58. What is Blister copper?

Watch Video Solution

59. State and explain the terms flux and slag.

Watch Video Solution

60. Name the metal used as a reducing agent in aluminothermic process.

Watch Video Solution

61. What is meant by the term pyrometallurgy?

Watch Video Solution

62. Differentiate between mineral and ore.

Watch Video Solution

63. Sulphide ores are concentrated by froth floatation process.

Watch Video Solution

64. Which of the ores mentioned in Table 6.1 can be concentrated by magnetic separation method?

Watch Video Solution

65. What is the role of a stabilizer in froth floatation process ? Give examples.

Watch Video Solution

66. Name the method used for refining of copper.

Watch Video Solution

67. Name the method used for refining of Nickel.

Watch Video Solution

68. Write the chemical reactions involved in the extraction of gold by cyanide process. Also give the role of zinc in the extraction.

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69. Cinnabar is an ore of

A. Hg

B. Ag

C. Sn

D. Al

Answer:

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70. Pyrolusite is an ore of

A. Ag

B. Hg

C. Sn

D. Mn

Answer:

Watch Video Solution

71. Malachite is an ore of

Watch Video Solution

72. The process employed for the concentration of sulphide are is

Watch Video Solution

73. Zone-refining is used for the

A. concentration of an ore

B. reduction of metal oxide

C. purification of metal

D. purification of an ore.

Answer:

Watch Video Solution

74. The metal always found in free state is

A. Au

B. Ag

C. Cu

D. Na

Answer:

Watch Video Solution

75. Bauxite is an ore of

Watch Video Solution

76. Most abundant element in earthâ€™s crust is

Watch Video Solution

77. Which of the following ore is concentrated by the froth floatation process?

Watch Video Solution

78. The most impure form of iron is called wrought iron. (True or False)

Watch Video Solution

79. Argentite is an ore of silver. (True or False)

Watch Video Solution

80. Haematite is an ore of _____ .

Watch Video Solution

81. What is the function of reduction in the metallurgical operations? Discuss briefly the carbon reduction process .

Watch Video Solution

82. What is meant by leaching ? Explain with an example.

Watch Video Solution

83. Why is zinc not extracted from zinc oxide through reduction with CO?

Watch Video Solution

84. Carbon monoxide (CO) gas is more dangerous than carbon dioxide (CO_2) Why?

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85. A chemical compound is used treat indigestion, stomach acid, heart burn and constipation. Name that chemical compound and what is its commercial name?

Watch Video Solution

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

Watch Video Solution

87. White vitriol is used for-

Watch Video Solution

88. The commercial name of zinc sulphate is-

Watch Video Solution

89. What is froth floatation process ? Name the ores which are concentrated by froth floatation process . What is meant by a depressant ?

Watch Video Solution

90. List important steps for the extraction of zinc from zinc blende .

Watch Video Solution

91. Outline the principles involved in the following methods of refining of metals.

Zone refining.

Watch Video Solution

92. Chemical formula for white vitriol is-

Watch Video Solution

93. Explain the basic principles of the following metallurgical operations: Refining by liquation.

Watch Video Solution

94. Explain the basic principles of the following metallurgical operations: Vapour phase refining.

Watch Video Solution

95. Explain the basic principles of the following metallurgical operations: Electrolytic refining.

Watch Video Solution

96. Explain the basic principles of the following metallurgical operations: Chromatography .

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97. A chemical compound is used for making rayon fabrics and in fertilizers. What is the name of that chemical compound?

Watch Video Solution

98. Zinc sulphate is used for-

Watch Video Solution

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

Watch Video Solution

100. Write one difference between ore and mineral.

Watch Video Solution

101. Define calcination and roasting.

Watch Video Solution

102. Write one difference between gangue and flux.

Watch Video Solution

103. Draw a neat and labelled diagram for the refining of aluminium by Hoop's electrolytic method.

Watch Video Solution

104. Write a short note on electrolytic refining of copper.

Watch Video Solution

105. Draw a neat and labelled diagram for zone refining of metals.

Watch Video Solution

106. Describe how the following change is brought about : Pig iron into steel.

Watch Video Solution

107. Describe how the following change is brought about : Zinc oxide into metallic zinc.

Watch Video Solution

108. Describe how the following change is brought about : Impure titanium into pure titanium.

Watch Video Solution

109. Describe the role of NaCN in the extraction of gold from gold ore.

Watch Video Solution

110. Fill in the blanks- _____ is the chemical compound used for making rayon fabrics and in the fertilizers.

Watch Video Solution

111. Describe the role of the following in the processes mentioned: Iodine in the refining of zirconium.

Watch Video Solution

112. What is the role of graphite rod in the metallurgy of aluminium ?

Watch Video Solution

113. Explain the role of the following in the extraction of metals from their ores : CO in the extraction of nickel.

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114. Explain the role of the following in the extraction of metals from their ores : Zinc in the extraction of

silver.

Watch Video Solution

115. Explain the role of the following in the extraction of metals from their ores : Silica in the extraction of copper.

Watch Video Solution

116. Why is the reduction of a metal oxide easier if the metal formed is in liquid state at the temperature of reduction?

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117. Explain magnetic separation with the help of diagram.

Watch Video Solution

118. Explain Mond's process used for refining of nickel.

Watch Video Solution

119. Explain the magnetic separation of Tinston ore?

Watch Video Solution

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

Watch Video Solution

121. What is the Commercial name of mercuric sulphide?

Watch Video Solution

122. Giving examples, differentiate between roasting and calcination.

Watch Video Solution

123. How is Cast iron different from Pig iron ?

Watch Video Solution

124. What is magnetic separation method for concentration of ore?

Watch Video Solution

125. The chemical name for Vermilian is_____

Watch Video Solution

126. Fill in the blanks with appropriate answer- Mercuric sulphide is also known as_____.

Watch Video Solution

127. Describe the role of the following in the processes mentioned: Iodine in the refining of zirconium.

Watch Video Solution

Watch Video Solution

128. State whether the statement is true or false- Vermilian is another name for zinc sulphide.

Watch Video Solution

129. State whether the statement is true or false- Vegetables are animal products.

Watch Video Solution

130. Give an example of zone refining of metals.

Watch Video Solution

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

Watch Video Solution

132. State whether the statement is true or false- Photosynthesis process is done in the presence of a green coloured pigment called nitrogen.

Watch Video Solution

133. State whether the statement is true or false- Artificial gold is an alloy made up of Copper, tin and phosphorus.

134. What are calcination and roasting ? In which type of ores are these processes used

135. Which metals are generally extracted by electrolytic process? Which positions these metals

generally occupy in the periodic table ?

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136. What types of metals are likely to exist in native state in nature ? Give examples.

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137. Write down the reactions taking place in different zones in the blast furnace during the extraction of iron.

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138. Define calcination and roasting.

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139. Match the items of column I with items of column II

Column I	Column II
(*i*) Distillation	(*a*) Ge
(*ii*) Liquation	(*b*) Ni
(*iii*) Zone refining	(*c*) Cu
(*iv*) Vapour phase refining	(*d*) Zn
	(*e*) Sn

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140. Name two metals which can be refined by Van Arkel method.

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141. Match the items of column I with items of column II

Column I	Column II
(i) Bauxite	(a) Zinc
(ii) Malachite	(b) Iron
(iii) Calamine	(c) Copper
(iv) Magnetite	(d) Aluminium
	(e) Lead

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142. Define the following term : Ore benefaction.

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143. What is Hydrometallurgy ?

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144. what is pyrometallurgy ?

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145. Copper is extracted from copper pyrites by roasting the ore partially and followed by .....

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146. Why the graphite rods in the extraction of aluminium from molten Al_2O_3 have to be replaced from time to time ?

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147. What is froth floatation process ? Name the ores which are concentrated by froth floatation process .

What is meant by a depressant ?

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148. Monel metal is an alloy which is made of mixture of_____,_____,_____.

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149. The reducing agent used in thermite process is

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150. Name and write the chemical formulae Of the three oxide ores of iron.

Watch Video Solution

151. Explain the following : Why is zinc and not copper used for the recovery of silver from the complex $[Ag(CN_2)]^-$?

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152. Define calcination.

Watch Video Solution

Watch Video Solution

153. Ilmenite is an ore of

Watch Video Solution

154. Barytes is an ore of barium. True or False

Watch Video Solution

155. Describe the method of refining of nickel.

Watch Video Solution

156. State the role of silica in the metallurgy of copper.

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157. Write the name of purest form of iron.

Watch Video Solution

158. Why are sulphide ores converted to oxide before reduction ?

Watch Video Solution

159. What is malachite? Write down its formula.

Watch Video Solution

160. Fill in the blanks- _____ metal alloy is used in marine engineering.

Watch Video Solution

161. How is zinc obtained from zinc blende? Give Chemical reactions.

Watch Video Solution

162. Fill in the blanks- _____ is the ore from which aluminium metal is extracted.

Watch Video Solution

163. How is Ni purified by Mond's process?

Watch Video Solution

164. Outline the principle of refining of metals by electrolytic refining.

Watch Video Solution

165. How does the FeO impurity present in sulphide ore of copper is removed?

166. Which of the following is the ore of zinc?

A. Bauxite

B. Magnetite

C. Malachite

D. Calamine

Answer:

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167. Name the method used for refining of Zirconium.

Watch Video Solution

168. Name the method of refining of metals such as germanium.

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169. In the extraction of Al, impure Al_2O_3 is dissolved in conc. NaOH to form Sodium aluminate and leaving impurities behind. What is the name of the process.

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170. What is the role of coke in the extraction of iron from its oxides?

Watch Video Solution

171. What chemical process is used for obtaining a metal from its oxide?

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172. Outline the principle of refining of metals by electrolytic refining.

Watch Video Solution

173. Outline the principles involved in the following methods of refining of metals.

Vapour phase refining.

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174. Explain the role of the following : SiO_2 in the extraction of copper.

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175. Describe the role of the following: Iodine in the refining of titanium.

Watch Video Solution

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

Watch Video Solution

177. Describe the principle involved in the following process of metallurgy : Froth floatation method

Watch Video Solution

178. Outline the principle of refining of metals by electrolytic refining.

Watch Video Solution

179. Outline the principles involved in the following methods of refining of metals.

Zone refining.

Watch Video Solution

180. Outline the principles involved in the following methods of refining of metals.

Vapour phase refining.

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181. Explain the method of froth floatation process of concentrating sulphide ore.

Watch Video Solution

182. Which methods are usually employed for purifying Nickel.

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183. Describe the role of the following : NaCN in the extraction of silver from a silver ore

Watch Video Solution

184. Explain the role of the following : SiO_2 in the extraction of copper.

Watch Video Solution

185. Name the method used for removing gangue from sulphide ores.

Watch Video Solution

186. How is wrought iron different from steel?

Watch Video Solution

187. Name the principal of the method of electrolytic refining of metals. Give one example .

Watch Video Solution

188. What is the role of depressant in froth flotation process ?

Watch Video Solution

189. Name the method used for refining of Zirconium.

Watch Video Solution

190. What is the role of coke in the extraction of iron from its oxides?

Watch Video Solution

191. Why is the reduction of a metal oxide easier if the metal formed is in liquid state at the temperature of reduction?

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192. Hydrogen bomb is based on the principle of:

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Watch Video Solution

193. What is the role of depressant in froth flotation process ?

Watch Video Solution

194. What is the role of coke in the extraction of iron from its oxides?

Watch Video Solution

195. Write two uses of monel metal?

Watch Video Solution

196. Describe the various methods employed for the refinining of crude metals.

Watch Video Solution

197. An ore of aluminium is

Watch Video Solution

198. Give important uses of aluminium.

Watch Video Solution

199. What is that special property of monel metal because of which it is used in marine engineering?

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200. Give examples of steel alloys

Watch Video Solution

201. Copper is extracted from copper pyrites by roasting the ore partially and followed by .....

Watch Video Solution

202. Write chemical reactions taking place in the extraction of zinc from zinc blende.

Watch Video Solution

203. List important uses of copper .

Watch Video Solution

204. Write down the reactions taking place in different zones in the blast furnace during the

extraction of iron.

Watch Video Solution

205. Outline the principles involved in the following methods of refining of metals.

Zone refining.

Watch Video Solution

206. Why is the extraction of copper from pyrites more difficult than that from its oxide ore through reduction?

A. copper (I) sulphide (Cu_2S)

B. sulphur dioxide (SO_2)

C. iron sulphide (FeS)

D. carbon monoxide (CO)

Answer:

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207. "Metals are usually not found as nitrates in their ores". Out of the following two (A and B) reasons which is/are true for the above observation? (A)

Metal nitrates are highly unstable. (B) Metal nitrates are highly soluble in water.

A. A and B are false

B. A is false but B is true

C. A is true but B is false

D. A and B are true.

Answer:

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208. Match items of Column I with the items of Column II and assign the correct code:

Column I	Column II
(i) Cyanide process	(a) Ultrapure Ge
(ii) Froth floatation process	(b) Dressing of ZnS
(iii) Electrolytic reduction	(c) Extraction of Al
(iv) Zone refining	(d) Extraction of Au
	(e) Purification of Ni

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209. Which alloy is used to make arms and equipments of machines?

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210. Which of the following is used in paints?

A. Electrolysing fused Al_2O_3 and cryolite

B. By heating Al_2O_3 with carbon

C. By heating Al_2O_3 in Muffle furnace

D. By a process called pyrometallurgy

Answer:

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211. $2X + B_2H_6 \rightarrow \left[BH_2(X)_2\right]^+ [BH_4]^-$

The amine(s) X is/are

A. Copper

B. Iron

C. Gold

D. Zinc

Answer:

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212. Which of the following reaction is an example of calcination process?

A. $2Ag + 2HCl + [O] \rightarrow 2AgCl + H_2O$

B. $2Zn + O_2 \rightarrow 2ZnO$

C. $2ZnS + 3O_2 \rightarrow 2ZnO + 2SO_2$

D. $MgCO_3 \rightarrow MgO + CO_2$

Answer:

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213. Fill in the blanks- Methane gas is also known as_____

Watch Video Solution

214. Principle of paper chromatography is based on

A. solid-liquid partition chromatography

B. liquid-liquid partition chromatography

C. liquid-solid adsorption chromatography

D. liquid-liquid sorption chromatography

Answer:

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215. Magnetic separation method is basically used for-

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216. Give two uses of methane gas?

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217. _____ is a mixture of solution of copper sulphate and lime which is used as fungicide.

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218. Heating mixture of Cu_2O and Cu_2S will give :

A. $Cu + SO_2$

B. $Cu + SO_3$

C. $CuO + CuS$

D. Cu_2SO_3

Answer:

Watch Video Solution

219. In view of the sign of $\Delta_r G^\circ$ for the following reactions : $PbO_2 + Pb \to 2PbO, \Delta_r G^\circ < 0$ $SnO_2 + Sn \to 2SnO, \Delta_r G^\circ > 0$ which oxidation states are more characteristic for lead and tin ?

A. For lead + 2, for tin + 2

B. For lead + 4, for tin + 4

C. For lead + 2, for tin + 4

D. For lead + 4, for tin + 2

Answer:

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220. State whether the statement is true or false- Baking powder is used to kill fungus and moulds of plants.

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221. In the context of the Hall-Heroult process for the extraction of Al,

which of the following statements is false ?

A. Al^{3+} is reduced at the cathode to form Al.

B. Na_3AlF_6 serves as the electrolyte.

C. CO and CO_2 are produced in this process

D. Al_2O_3 is mixed with CaF_2 which lowers the melting point of the mixture and brings conductivity .

Answer:

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222. Which one of the following ore is best concentrated by froth floatation method?

A. Magnetite

B. Siderite

C. Galena

D. Malachite

Answer:

Watch Video Solution

223. ΔG° vs T plot in the Ellingham's diagram slopes downward for the reaction

A. $Mg + \frac{1}{2}O_2 \rightarrow MgO$

B. $2Ag + \frac{1}{2}O_2 \rightarrow Ag_2O$

C. $C + \frac{1}{2}O_2 \rightarrow CO$

D. $CO + \frac{1}{2}O_2 \rightarrow CO_2$

Answer:

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224. Identify the reaction that does not take place in a blast furnace :

A. $2Fe_2O_3 + 3C \rightarrow 4Fe + 3CO_2$

B. $CO_2 + C \rightarrow 2CO$

C. $CaCO_3 \rightarrow CaO + CO_2$

D. $CaO + SiO_2 \rightarrow CaSiO_3$

Answer:

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225. If C and D are two events such that $C \subset DandP(D) \neq 0$, then the correct statement among the following is :

A. Hydrogen is used to reduce NiO

B. Zirconium is refined by Van Arkel method

C. The sulphide ore galena is concentrated by froth floatation process

D. In the metallurgy of iron, the flux used is SiO_2

Answer:

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226. In aluminothermic process, Al is used as

A. Reducing agent

B. Oxidising agent

C. Catalyst

D. Electrolyte

Answer:

 Watch Video Solution

227. State the role of silica in the metallurgy of copper.

A. $1500 - 1600^{\circ} C$

B. $400 - 700^{\circ} C$

C. $800 - 1000^{\circ} C$

D. $1200 - 1500^{\circ} C$

Answer:

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228. In the electrolytic refining of zinc, ...

A. graphite is at the anode

B. the impure metal is at the cathode

C. the metal ion gets reduced at the anode

D. acidified zinc sulphate is the electrolyte

Answer:

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229. According to Ellingham diagram, the oxidation reaction of carbon to carbon monoxide may be used to reduce which one of the following oxides at the lowest temperature ?

A. Al_2O_3

B. Cu_2O

C. MgO

D. ZnO

Answer:

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230. formula of copper sulphate

A. Na

B. Fe

C. Hg

D. Ag

Answer:

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231. From the Ellingham graphs on carbon, which of the following statements is false ?

A. CO_2 is more stable than CO at less than 983 K

B. CO reduces Fe_2O_3 to Fe at less than 983 K

C. CO is less stable than CO_2 at more than 983 K

D. CO reduces Fe_2O_3 to Fe in the reduction zone of blast furnace.

Answer:

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232. The function of potassium ethyl xanthate in froth floatation process is to make the ore

A. attracted towards water

B. water repellant

C. lighter

D. heavier

Answer:

Watch Video Solution

233. Magnetic separation is used in the concentration of: Copper pyrites, Chromite, Bauxite, Cinnabar.

A. reduction by carbon

B. electrolysis of ore

C. roasting of ore in O_2

D. magnetic separation

Answer:

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234. When limestone is heated, CO_2 is given off. The metallurgical operation is

A. smelting

B. reduction

C. calcination

D. roasting.

Answer:

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235. The statement that is not correct is

A. a furnace lined with haematite is used to convert cast iron to wrought iron.

B. collectors enhance the wettability of mineral particles during froth floatation.

C. in vapour phase refining the metal should form volatile compound.

D. copper from its low grade ores is extracted by hydrometallurgy .

Answer:

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236. Match the metal in Column I with the ores in Column II

Column I	Column II
(A) Aluminium	(*p*) Siderite
(B) Zinc	(*q*) Malachite
(C) Copper	(*r*) Sphalerite
(D) Iron	(*s*) Bauxite

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237. Match the extraction process in Column I with the metal in Column II.

Column I	Column II
(A) Carbon reduction	(*p*) Gold
(B) Self reduction	(*q*) Copper
(C) Electrolytic reduction	(*r*) Aluminium
(D) Complex formation followed by displacement by metal	(*s*) Lead

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

Column I	Column II
(A) Carbonate	(p) Siderite
(B) Sulphide	(q) Malachite
(C) Hydroxide	(r) Bauxite
(D) Oxide	(s) Calamine
	(t) Argentite

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239. In the extraction of chlorine from brine _____ .

A. oxidation of Cl^- ion to chlorine gas occurs.

B. reduction of Cl^- ion to chlorine gas occurs.

C. for overall reaction ΔG^Θ has negative value.

D. a displacement reaction takes place.

Answer:

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240. When copper ore is mixed with silica, in a reverberatory furnace copper matte is produced. The copper matte contains _____ . t

A. sulphides of copper (II) and iron (II)

B. sulphides of copper (II) and iron (III)

C. sulphides of copper (I) and iron (II)

D. sulphides of copper (I) and iron (III)

Answer:

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241. Which of the following reactions is an example of auto reduction ?

A. $Fe_3O_4 + 4CO \rightarrow 3Fe + 4CO_2$

B. $Cu_2O + C \rightarrow 2Cu + CO$

C. $Cu^{2+}(aq) + Fe(s) \rightarrow Cu(s) + Fe^{2+}(aq)$

D. $Cu_2O + \frac{1}{2}Cu_2S \rightarrow 3Cu + \frac{1}{2}SO_2$

Answer:

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242. A number of elements are available in earth's crust but most abundant elements are_____ .

A. Al and Fe

B. Al and Cu

C. Fe and Cu

D. Cu and Ag

Answer:

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243. Zone refining is based on the principle that_____ .

A. impurities of low boiling metals can be separated by distillation.

B. impurities are more soluble in molten metal than in solid metal.

C. different components of a mixture are differently adsorbed on an adosrbent.

D. vapours of volatile compound can be decomposed in pure metal.

Answer:

244. In the extraction of copper from its sulphide ore, the metal is formed by the reduction of Cu_2O with :

A. FeS

B. CO

C. Cu_2S

D. SO_2

Answer:

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245. During the electrolysis of NaCl solution, the gas liberated at the anode is

A. $Cl^-(aq.) \rightarrow \frac{1}{2}Cl_2(g) + e^-, E^{\Theta}_{Cell} = 1.36V$

B.

$$2H_2O(l) \rightarrow O_2(g) + 4H^+ + 4e^-, E^{\Theta}_{Cell} = 1.23V$$

C. $Na^+(aq.) + e^- \rightarrow Na(s), E^{\Theta}_{Cell} = 2.71V$

D. $H^+(aq.) + e^- \rightarrow \frac{1}{2}H_2(g), E^{\Theta}_{Cell} = 0.00V$

Answer:

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246. An ore of aluminium is

A. Al^{3+} is oxidised to Al(s) .

B. graphide anode is oxidised to carbon monoxide and carbon dioxide .

C. oxidation state of oxygen changes in the reaction at anode .

D. oxidation state of oxygen changes in the overall reaction involved in the process .

Answer:

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247. Electrolytic refining is used to purify which of the following metals ?

A. Cu and Zn

B. Ge and Si

C. Zr and Ti

D. Zn and Hg

Answer:

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248. Extraction of gold and silver involves leaching the metal with CN^- ion. The metal is recovered by _____ .

A. displacement of metal by some other metal from the complex ion .

B. roasting of metal complex.

C. calcination followed by roasting.

D. thermal decomposition of metal complex.

Answer:

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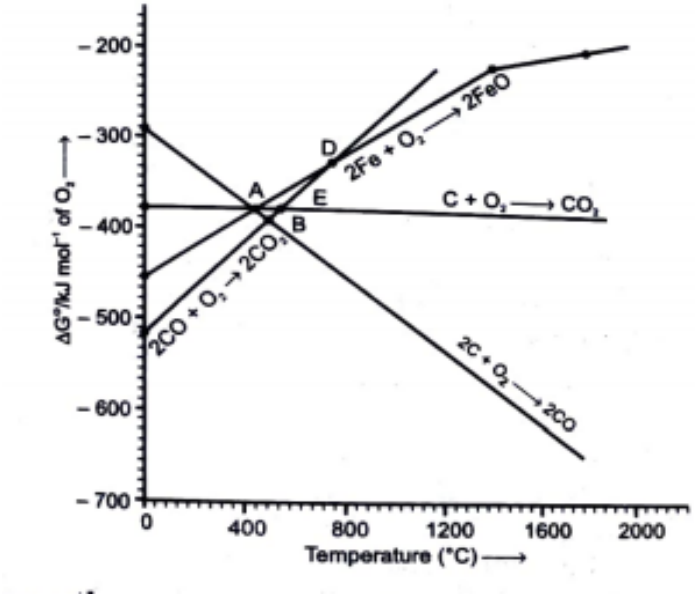
249. Answer the question on the basis of figure given below :



Choose the correct option of temperature at which carbon reduces FeO to iron and produces CO.

A. Below temperature at point A.

B. Approximately at the temperature corresponding to point A.

C. Above temperature at point A but below temperature at point D.

D. Above temperature at point A.

Answer:

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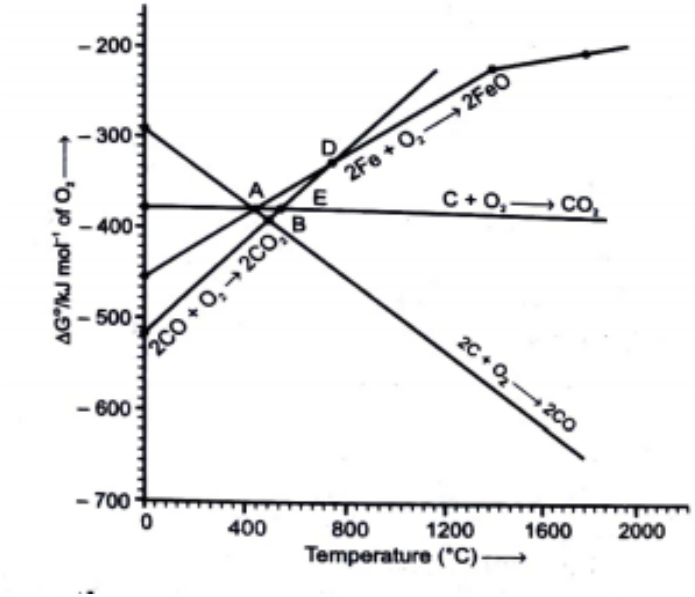
250. Answer the question on the basis of figure given below :



Below point 'A' FeO can _____ .

A. be reduced by carbon monoxide only.

B. be reduced by both carbon monoxide and carbon .

C. be reduced by carbon only.

D. not be reduced by both carbon and carbon monoxide.

Answer:

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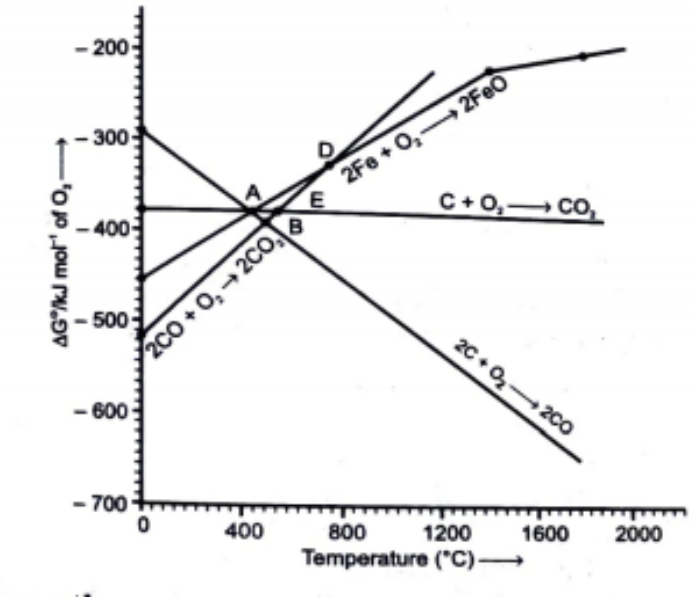
251. Answer the question on the basis of figure given below :



For the reduction of FeO at the temperature corresponding to point D, which of the following statements is correct ?

A. ΔG value for the overall reduction reaction with carbon monoxide is zero .

B. ΔG value for the overall reduction with a mixture of 1 mol carbon and 1 mol oxygen is

positive .

C. ΔG value for the overall reduction with a mixture of 2 mol carbon and 1 mol oxygen will be positive .

D. ΔG value for the overall reduction reaction with carbon monoxide is negative.

Answer:

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252. In the following questions two or more options may be correct. At the temperature corresponding to

which of the points in the given figure above. FeO will be reduced to Fe by coupling the reaction $2FeO \rightarrow 2Fe + O_2$ with all of the following reactions ? (i) $C + O_2 \rightarrow CO_2$ (ii) $2C + O_2 \rightarrow 2CO$ and (iii) $2CO + O_2 \rightarrow 2CO_2$

A. Point A

B. Point B

C. Point D

D. Point E

Answer:

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253. In the following questions two or more options may be correct. Which of the following options are correct ?

A. Cast iron is obtained by remelting pig iron with scrap iron and coke using hot air blast.

B. In extraction of silver, silver is extracted as cationic complex.

C. Nickel is purified by zone refining.

D. Zr and Ti are purified by van Arkel method.

Answer:

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254. In the extraction of aluminium by Hall-Heroult process, purified Al_2O_3 is mixed with CaF_2 to

A. lower the melting point of Al_2O_3.

B. increase the conductivity of molten mixture.

C. reduce Al^{3+} into Al(s).

D. acts as catalyst.

Answer:

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255. Which of the following statements is correct ?

A. Collectors enhance the non-wettability of the mineral particles.

B. Collectors enhance the wettability of gangue particles.

C. By using depressants in the process two sulphide ores can be separated.

D. Froth stabilisers decrease wettability of gangue.

Answer:

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256. In the Froth Floatation process, zinc sulphide and lead sulphide can be separated by _____ .

A. using collectors.

B. adjusting the proportion of oil to water.

C. using depressant.

D. using froth stabilisers.

Answer:

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257. Common impurities present in bauxite are _____ .

A. CuO

B. ZnO

C. Fe_2O_3

D. SiO_2

Answer:

Watch Video Solution

258. Which of the following ores are concentrated by froth floation ?

A. Haematite

B. Galena

C. Copper pyrites

D. Magnetite

Answer:

Watch Video Solution

259. Which of the following reactions occur during calcination?

A. $CaCO_3 \rightarrow CaO + CO_2$

B. $2FeS_2 + \frac{11}{2}O_2 \rightarrow Fe_2O_3 + 4SO_2$

C. $Al_2O_3 . xH_2O \rightarrow Al_2O_3 + xH_2O$

D. $ZnS + \frac{2}{3}O_2 \rightarrow ZnO + SO_2$

Answer:

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260. For the metallurgical process of the ores calcined ore can be reduced by carbon ?

A. haematite

B. calamine

C. iron pyrites

D. Sphalerite

Answer:

Watch Video Solution

261. The main reactions occurring in blast furnace during extraction of iron from haematite are _____ .

A. $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$

B. $FeO + SiO_2 \rightarrow FeSiO_3$

C. $Fe_2O_3 + 3C \rightarrow 2Fe + 3CO$

D. $CaO + SiO_2 \rightarrow CaSiO_3$

Answer:

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262. In which of the following method of purification, metal is converted to its volatile compound which is decomposed to give pure metal ?

A. heating with stream of carbon monoxide.

B. heating with iodine.

C. liquation.

D. distillation.

Answer:

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263. Which of the following statements are correct ?

A. A depressant prevents certain type of particle to come to the froth.

B. Copper matte contains Cu_2S and ZnS.

C. The solidified copper obtained from reverberatory furnace has blistered appearance due to evolution of SO_2 during the extraction.

D. Zinc can be extracted by self-reduction.

Answer:

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264. Give the preparation of chlorine.

A. ΔG^{Θ} for the overall reaction is negative.

B. ΔG^{Θ} for the overall reaction is positive.

C. E^{Θ} for overall reaction has negative value.

D. E^{Θ} for overall reaction has positive value.

Answer:

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265. Match the items of Column I with items of Column II and assign the correct code:

Column I	Column II
(A) Pendulum	(1) Chrome steel
(B) Malachite	(2) Nickel steel
(C) Calamine	(3) Na_3AlF_6
(D) Cryolite	(4) $CuCO_3 \cdot Cu(OH)_2$
	(5) $ZnCO_3$

A. A(1)B(2)C(3)D (4)

B. A (2) B (4) C (5) D (3)

C. A (2) B (3) C (4) D (5)

D. A (4) B (5) C (3) D (2)

Answer:

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266. Match the items of Column I with items of Column II and assign the correct code:

Column I	Column II
(A) Coloured bands	(1) Zone refining
(B) Impure metal to volatile complex	(2) Fractional distillation
(C) Purification of Ge and Si	(3) Mond Process
(D) Purification of mercury	(4) Chromatography
	(5) Liquation

A. A(1)B(2)C(4)D(5)

B. A (4) B (3) C (1) D (2)

C. A(3)B(4)C(2)D(1)

D. A(5) B(4)C (3)D (2)

Answer:

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267. Match items of Column I with the items of Column II and assign the correct code:

Column I	Column II
(A) Cyanide process	(1) Ultrapure Ge
(B) Froth Floatation Process	(2) Dressing of ZnS
(C) Electrolytic reduction	(3) Extraction of Al
(D) Zone refining	(4) Extraction of Au
	(5) Purification of Ni

A. A(4)B(2)C(3)D(1)

B. A(2)B(3)C (1) D(5)

C. A(1)B(2)C (3) D(4)

D. A (3)B (4)C (5)D (1)

Answer:

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268. Match items of Column I with the items of Column II and assign the correct code:

Column I	Column II
(A) Sapphire	(1) Al_2O_3
(B) Sphalerite	(2) NaCN
(C) Depressant	(3) Co
(D) Corundum	(4) ZnS
	(5) Fe_2O_3

A. A(3) B (4) C (2) D(1)

B. A (5) B (4) C (3) D (2)

C. A (2) B (8) C (4) D (5)

D. A (1) B (2) C (3) D (4)

Answer:

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269. Match items of Column I with the items of Column II and assign the correct code:

Column I	Column II
(A) Blisterred Cu	(1) Aluminium
(B) Blast furnace	(2) $2Cu_2O + Cu_2S \rightarrow 6Cu + SO_2$
(C) Reverberatory furnace	(3) Iron
(D) Hall-Heroult process	(4) $FeO + SiO_2 \rightarrow FeSiO_3$
	(5) $2Cu_2S + 3O_2 \rightarrow 2Cu_2O + 2SO_2$

A. A (2) B (3) C (4) D (1)

B. A(1) B (2) C (3) D (5)

C. A(5) B (4) C (3) D (2)

D. A(4)B (5) C (3) D (2)

Answer:

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270. In the following questions a statement of assertion followed by a statement of reason is given. Choose the correct answer out of the following choices. (a) Both assertion and reason are true and reason is the correct explanation of assertion. (b) Both assertion and reason are true but reason is not the correct explanation of assertion. (c) Assertion is true but reason is false. (d) Assertion is false but

reason is true. (e) Assertion and reason both are wrong. Assertion : Nickel can be purified by Mond process. Reason: $Ni(CO)_4$ is a volatile compound which decomposes at 460 K to give pure Ni.

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271. Assertion : Zirconium can be purified by Van Arkel method.

Reason : Zrl_4 is volatile and decomposes at 1800 K.

A. Both assertion and reason are true and the reason is the correct explanation of assertion.

B. Both asertion and reason are true and the reason is not the correct explanation of assertion

C. Assertion is true but the reason in false.

D. Assertion is false but reason is true.

Answer:

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272. Assertion : Sulphide ores are concentrated by Froth Flotation method. Reason : Cresols stabilise the froth in Froth Flotation method.

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273. Assertion : Zone refining method is very useful for producing semiconductors. Reason : Semiconductors are of high purity.

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274. Assertion : Hydrometallurgy involves dissolving the ore in a suitable reagent followed by precipitation by a more electropositive metal. Reason : Copper is extracted by hydrometallurgy.

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275. Why is pine oil used in froth floatation method?

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276. Which is better reducing agent at temperature 983 K, C or Co?

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277. Define fauna.

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278. How does adsorption of gases on solids depend upon: Temperature?

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279. The cause of Brownian movement is

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280. What is Tyndall effect? Why do colloidal solutions show Tyndall effect?

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281. What are enzyme catalysts? Give two examples of enzyme catalysis reactions.

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282. Compare lyophilic and lyophobic sols in term of Stability .

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283. What are lyophilic and lyophobic sols ? Give one example of each. Why lyophobic sol is easily

coagulated ?

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284. Define calcination and roasting.

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285. State the role of silica in the metallurgy of copper.

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286. Describe the role of the following in the processes mentioned: Iodine in the refining of zirconium.

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287. Describe the role of the following : NaCN in the extraction of silver from a silver ore

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

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289. Outline the principle of refining of metals by electrolytic refining.

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290. Outline the principles involved in the following methods of refining of metals.

Vapour phase refining.

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291. Outline the principles involved in the following methods of refining of metals.

Zone refining.

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292. Explain what is observed :- electric current is passed through a colloidal sol?

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293. Explain what is observed :- when a beam of light is passed through a colloidal sol.

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294. Explain what is observed :- an electrolyte, NaCl is added to hydrated ferric oxide sol.

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295. Define the following term : Micelles.

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296. Explain the following: Peptization .

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297. Define the following term : Electophoresis .

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298. Explain how the phenomenon of adsorption finds application in the following process : production of vacuum.

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299. Give four examples of heterogeneous catalysis.

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300. Explain how the phenomenon of adsorption finds application in the following process : Froth floation process.

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301. What is adsorption isotherm ?

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302. Write notes on Hardy Schulze Rule ?

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303. What are emulsions ? What are their different types ? Give one example of each type.

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