CHEMISTRY

BOOKS - MODERN PUBLICATION

GENERAL PRINCIPLE OF ISOLATION OF ELEMENTS

Exercise

1. Zinc blende (an ore) is

A. ZnO

B. $ZnCO_3$

C. Zns

D. Zn_2OCI_2

Answer: C

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2. Froth floatation process for the concentration of ores is a practical application of :

A. Adsorption

B. Absorption

C. Coagulation

D. Sedimentation

Answer: A

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3. Which element is present in pitchblende :

A. U

B. Ce

C. Ba

D. Mg

Answer: A

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4. The non-fusible impurities of ores are removed by adding :

A. Flux

B. Slag

C. Gangue

D. none

Answer: A

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5. Which is known as blister copper ?

A. Pure copper

B. 98% copper

C. Ore of copper

D. Alloy of copper

Answer: B

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6. Which process represents the following change ,

$$Ni_{impure} + 4CO \rightarrow Ni(CO)_4 \rightarrow Ni_{pure} + 4CO$$

A. Cupellation

B. van Arkel

C. Mond's process

D. Zone refining

Answer: B

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7. The common method of extraction of metals from oxide ores involves :

A. Reduction with carbon

B. Reduction with aluminium

C. Reduction with hydrogen

D. Electrolytic method

Answer: A

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

$$Ni \underset{\text{impure}}{+} 4CO \xrightarrow{320K} Ni(CO)_4 \xrightarrow{420K} Ni \underset{pure}{+} 4CO$$

A. Cupellation

B. Monds process

C. van Arkel method

D. zone refining

Answer: B

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9. Smelting is the reduction of oxide to metal by :

A. C

B. Al

C. H

D. Electric current

Answer: A

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10. Which furnace can be used to get temperature above $3000 \circ C$?

A. Blast furnace

B. Arc furnace

C. Reverberatory furnace

D. None

Answer: B

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11. Heating of pyrite ores in air to remove sulphur is known as :

A. Calcination

B. Fluxing

C. Smelting

D. Roasting

Answer: D

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12. In froth floatation process many chemicals (frother, collector, activator and depressent) are use . Which is called a frother ?

A. $CuSO_4$

B. $NaCN$ + alkali

C. Pine oil

D. potassium xanthate

Answer: C

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13. Which substance is used as basic refractory material in furnace :

A. Al_2O_3

B. Si_O

C. CaO

D. Fe_2O_3

Answer: C

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14. Iron ores are dressed by :

A. Froth floatation process

B. magnetic separation

C. Hand picking

D. all the above

Answer: B

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15. Which metal can be purified by distillation ?

A. Cu

B. Ag

C. Fe

D. Hg

Answer: D

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16. The correct statement is :

A. Dolomite is the ore of zinc

B. Galena is the ore of mercury

C. Pyrolusite is the ore of iron

D. cassiterite is the ore of tin

Answer: D

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17. Galena is an ore of :

A. Zn

B. Pb

C. Sn

D. Ca

Answer: B

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18. To obtain chromium from chromic oxide Cr_2O_3,The method used is :

A. Carbon reduction

B. Carbon monoxide reduction

C. Alumino-thermic process

D. Electolytic reduction

Answer: C

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19. Argentite is a mineral of :

A. Fe

B. Zn

C. Ag

D. Cu

Answer: C

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20. Cinnabar is :

A. CuS

B. Ag_2S

C. ZnS

D. HgS

Answer: D

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21. What is Tyndall effect? What is it due to?

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22. Which of the following is the heaviest metal ?

A. U

B. Ra

C. Pb

D. Hg

Answer: A

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23. Silicon is the main constituent of :

A. Rocks

B. Alloys

C. Animals

D. Plants

Answer: A

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24. The furnace which provides the higest temperture is :

A. Blast furnace

B. Reverberatory furnace

C. Electrical furnace

D. Muffle furnace

Answer: A

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25. Which is not a mineral of aluminium:

A. Anhydrite

B. Bauxite

C. Corundum

D. Diaspore

Answer: C

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26. Carnallite is a mineral of :

A. Ca

B. Na

C. Mg

D. Zn

Answer: A

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27. Polling process is used :

A. For the removal of Cu_2 from Cu

B. For the removal of Cu_2 from Cu

C. For the removal of Fe_2O_3 From Fe

D. All of the above

Answer: A

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28. Mond process is used in the extraction of :

A. Cu

B. Ag

C. Na

D. K

Answer: B

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29. Heating of carbonate ores to remove carbon is called as :

A. Roasting

B. Calcination

C. Smelting

D. Fluxing

Answer: C

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30. In metallurgical process , the flux used for removing basic impurities is :

A. Silica

B. Sodium Chloride

C. Limestone

D. Sodium carbonate

Answer: A

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31. Element easily reducible is :

A. Fe

B. Ag

C. Cu

D. Sr

Answer: B

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32. In electrorefining process the impure metal is made as ___ .

A. Cathode

B. Anode

C. Both

D. None

Answer: C

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33. The volatile metal is :

A. Ag

B. Cu

C. Zn

D. Fe

Answer: B

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34. Explain the following terms:

Tyndall effect

A. Cd

B. Ni

C. Sb

D. Pb

Answer: D

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35. The region in which metals are found in earth is called :

A. Atomophil

B. Lithophil

C. Calcophil

D. Sidrophil

Answer: B

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36. Aluminothermic process is used for the extraction of metals, whose oxides are :

A. Fusible

B. Not easily reduced by carbon

C. Not easily reduced by hydrogen

D. Strongly basic

Answer: B

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37. The metal that cannot be obtained by electrolysis of the aqueous solution of their salts is:

A. Ag

B. Mg

C. Cu

D. Cr

Answer: A

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38. A process employed for the concentration of sulphide ore is :

A. Froth floatation

B. Roasting

C. Electrolysis

D. Bessemerisation

Answer: C

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39. A mineral is known as ore if metal

A. cannot be produced from it

B. can be produced from it

C. can be extracted from it profitably

D. is very costly

Answer: B

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40. The slag obtained during the extraction of copper pyrites is composed mainly of :

A. Cu_2S

B. $FeSiO_3$

C. $CuSiO_3$

D. SiO_2

Answer: C

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41. Zone refinning is used form the

A. Concentration of an ore

B. reduction of metal oxide

C. Purifiction of metal

D. Purification of an ore

Answer: C

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42. Electrolysis is used in :

A. Electroplating

B. Electrorefining

C. Both (a) and (b)

D. None of these

Answer: B

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43. Which of the following process is used for the concentration of Bauxite ?$(Al_2O_3.2H_2O)$

A. Froth floatation

B. Leaching

C. Liquation

D. Magnetic separation

Answer: A

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44. Mac Arthur process is used for :

A. Ag

B. Fe

C. Cl

D. O_2

Answer: C

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45. The earthy impurities associated with mineral used in metallurgy are called ?

A. Slag

B. Flux

C. Gangue

D. Ore

Answer: C

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46. Aluminothermic process is used in the metallurgy of

A. pb

B. Ag

C. Cr

D. None of these

Answer: A

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

A. Anode mud

B. Cathode mud

C. Cathode

D. Electrolyte

Answer: D

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48. During smelting, an additional substance is added which combines with impurities to form a fusible produuct. It is known as :

A. Slag

B. Mud

C. Gangue

D. Flux

Answer: A

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49. A basic lining is given to a furnace by using

A. Calcined dolomite

B. Limestone

C. Haematite

D. Silica

Answer: A

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50. Purification of silicon element used in semiconductors is done by :

A. Zone refining

B. Heating

C. Froth floatation

D. Heating in vacum

Answer: B

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51. Which is the incorrect statement in the following ?

A. Calamine and siderite are carbonates

B. Argentite and cuprite are oxides

C. Zinc blende and iron pyrites are sulphides

D. Malachite and azurite are ores of copper .

Answer: B

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52. Most abundant metal on the surface of earth is :

A. Iron

B. Aluminium

C. Calcium

D. Sodium

Answer: B

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53. Silver containing lead as impurity is purified by :

A. Poling

B. Cupellation

C. Lavigation

D. Distillation

Answer: B

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54. The important ore of iron is :

A. Siderite

B. Haematite

C. Pyrites

D. Banxite

Answer: D

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55. The lustre of a metal is due to

A. its high density

B. its high polishing

C. its chemical inertness

D. presence of free electrons

Answer: A

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56. The metal extracted by cyanide process is :

A. sliver

B. copper

C. Iron

D. Sodium

Answer: B

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57. Malachite is an ore of :

A. Iron

B. Copper

C. mercury

D. Zinc

Answer: D

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58. Cassiterite is an ore of:

A. Mn

B. Ni

C. Sb

D. Sn

Answer: C

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59. In the electrolytic process for the extraction of aluminium the electrolyte is :

A. $Al(OH)_3$ in $NaOH$ solution

B. An aqueous solution of $Al_2\left((SO)_4 \_ 3\right)$

C. A molten mixture of Al_2O_3 and $Al(OH)_3$

D. A molten mixture of 'Al_(2)O_(3)' and 'Al(OH)_(3)'

Answer: D

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60. Heating pyrites to remove sulphur is called

A. Smelting

B. Calcination

C. Liquation

D. Roasting

Answer: D

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61. In the extraction of iron, the slag produced is :

A. CO

B. $FesiO_3$

C. $MgSiO_3$

D. $CaSiO_3$

Answer: B

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62. The process of converting hydrated alumina into anhydrous alumina is called :

A. Roasting

B. Calcination

C. Dressing

D. smelting

Answer: D

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63. Nickel is purified by thermal decomposition of its :

A. Hydride

B. Chloride

C. Azide

D. Carbonyl

Answer: C

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64. The most abundant element in the earth's crust (by weight) is :

A. Si

B. Al

C. O

D. Fe

Answer: D

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65. In the thermite process, the reducing agent is :

A. Nickel

B. Zinc

C. Sodium

D. Aluminium

Answer: B

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66. What is mean by pyrometallurgy ?

A. $Na_2B_4O_7.10H_2O$

B. Na_(2)B_(6)O(11).5H_(2)O`

C. $5H_2O$

D. $H_3 \_ BO_4$

Answer: A

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67. Which of the following process is used in the extractive metallurgy of magnesium ?

A. Fused salt eletrolysis

B. Self reduction

C. Aqueous solution electrolysis

D. Thermite reduction

Answer: A

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68. Metal always found in free state is :

A. Gold

B. Sliver

C. Copper

D. Sodium

Answer: A

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69. The process of removal of gangue particles from ores is known as :

A. Concentration

B. Refining

C. smelting

D. None of these

Answer: C

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70. Barytes ore is :

A. $BeSO_4$

B. $BeCl_2$

C. $BaSO_4$

D. $BaCl_2$

Answer: D

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71. Which statement is correct ?

A. All minerals are ores

B. A minerals cannot be ores

C. An ore cannot be a mineral .

D. All ores are minerals

Answer: D

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72. Mond process is used in the extraction of :

A. Electrolysis

B. Metal displacement

C. Smelting

D. Carbonate ores

Answer: B

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73. Roasting is generally carried out in case of :

A. Oxide ores

B. Sulphide ores

C. Silicate ores

D. Carbonate ores

Answer: C

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74. Metal occur in the native form because of their

A. High electronegativity

B. High reactivity

C. Low reactivity

D. Low density

Answer: C

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75. Which pair of elements can from alloy ?

A. Zn and Pb

B. Fe and Hg

C. Fe and C

D. C and pt

Answer: B

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76. Specific gravity of slag is :

A. Always same as that of molten metal

B. Always higher than molten metal

C. Always less than molten metal

D. None of these

Answer: B

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77. Sperrylite is :

A. $AgCl$

B. $PtAs_2$

C. Fe_2O_3

D. SnO_2

Answer: A

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78. Which process is used for the purification of Al metal ?

A. Hoop's process

B. Bayer's process

C. Serpeak's process

D. $Hall'sprocess$

Answer: A

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79. Oil used as frother in froth floatation process

A. Pine oil

B. Mustard oil

C. Coconut oil

D. Olive oil

Answer: A

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80. Calamine is an ore of

A. Hg

B. Zn

C. Cd

D. Ca

Answer: B

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81. Less reactive metals Au ,pt mostly occur in _____.

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82. Chemically reactive metals occur in _____.

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83. Chemical method used in concentration of ore is called _____.

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84. Nickel is refined by ____process.

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85. Paramagnetic character of transition elements is due to _____ .

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86. The hardness of iron is mostly due to the presence of _____.

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87. Composition of copper matel is _____.

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88. The purity of blistered copper is _____ .

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89. Copper metal obtained from Bessemer converter is known as ___.

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90. Blue vitriol is _____ .

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91. Cast iron contains maximum percentage of _____ .

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92. Azurite is the ore of _____.

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93. Bell metal is an alloy of ___ and _____ .

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94. German silver is alloys of _____.

Watch Video Solution

95. Mohr.s salt is _____.

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96. Galvanised iron sheets have coating of :

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97. $FeSO_4.7H_2O$ is known as

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98. Percentage of carbon in steel is _____.

Watch Video Solution

99. Brass contains _____.

Watch Video Solution

100. Improrant iron ore is _____ .

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101. Purest from of iron is _____ .

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102. Fe_3O_4 is known as _____ .

Watch Video Solution

103. $CuSO_4, 5H_2O$ is known as _____.

Watch Video Solution

104. Constantion is alloys of _____.

Watch Video Solution

105. ZnS is:

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106. During electrolytic method of extraction, aluminium liberted at _____ .

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107. Titanium is purified by _____?

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108. Extra pure germanium is obtained by _____.

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109. Aluminium is obtained by :

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110. Write down the composition of German silver.

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111. Name any two alloys of steel.

Watch Video Solution

112. Name two ores of copper.

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113. Name two alloys of copper.

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114. Which one is more paramagnetic: Fe^{3+} or Fe^{3+} ?

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115. What is formula of green vitriol ?

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116. What is formula of Mohr's salt.

Watch Video Solution

117. What is % of carbon in cast iron and in steel ?

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118. Copper metal obtained from Bessemer converter is known as ____.

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119. Which is the lightest transition metal ?

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120. Between CO and C , which is better reducing agent at 983 k

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121. What is the cheapest and most abundant reducing agent in the extraction of metals ?

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122. Name the method used for refining of Nickel metal.

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123. Name the method used for the refining of copper metal.

Watch Video Solution

124. The composition of 'Copper Matte' is :

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125. Name two ores of copper.

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126. Between zinc and copper which metal will react dilute sulphuric acid ?

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127. Name the process by which sulphide ore is concentrated ?

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128. Brass contains which metals?

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129. The highest oxidation state of transition metal is what ?

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130. The highest oxidation state of transition metal is what ?

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131. An ore of galena (PbS) is contaminated with Zinc blende (ZnS). Name one chemical which can be used to concentrate galena selectively by froth floatation process.

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132. Name two ores of zinc

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133. what is the name of purest form of iron

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134. Name the purification process to get 100 % pure aluminium metal.

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135. What is the role of stabilizer in froth floatation process ?

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

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137. A mixture of compounds A and B is passed through a column of Al_2O_3 by using alcohol as eluent . 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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138. Why is zinc and not copper used for the recovery of metallic silver from its cyanide complex $\left[Ag(CN)_2\right]^-$?

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139. Why is partial roasting of sulphide ore done in metallurgy of copper ?

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140. What happens when potassium iodide is added to $CuSO_4$ solution ?

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141. Cast iron is harder than pure iron . Why ?

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142. Calculate the oxidation number of chromium in $K_2Cr_2O_7$.

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143. Explain why $CuSO_4$ is blue while $ZnSO_4$ is white.

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144. What is flux? Give an example.

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145. What is calcination?

Watch Video Solution

146. What is electro-refining ? Give one example .

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147. Distinguish between flux and slag ?

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148. What is the function of limestone the extraction of iron? Give equation to explain its action.

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149. What is roasting?

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150. How slag is formed in metal extraction ?

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151. Distinguish between mineral and ore.

Watch Video Solution

152. What is difference between calcination and roasting ?

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153. What is self-reduction in metallurgy? Give example.

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154. What is leaching ? Glve an example.

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155. Why cannot Al be reduced by carbon ?

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156. What is the role of stabilizer in froth floatation process ?

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157. It is true that under certain conditions magnesium can reduce SiO_2 and silicon can reduce MgO. What are those conditions ?

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158. What is the significance of leaching in the extraction of aluminium?

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159. What is the role of graphite rods in the electrometallurgy of aluminium?

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

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161. Explain CaO react with SiO_2 to form a slag ?

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162. Pine oil is used in forth floatation method . Why ?

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163. Why sulphide ores are concentred by froth floatation process.

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164. How is copper extracted from its low grade ore?

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165. Between CO and C , which is better reducing agent at 983 k

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166. An ore of galena (PbS) is contaminated with Zinc blende (ZnS). Name one chemical which can be used to concentrate galena selectively by froth floatation process.

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167. 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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168. 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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169. Copper can be extracted by hydrometallurgy but not zinc. Explain.

170. Name the method used for refining of Nickel metal.

171. Which solution is used for the leaching of silver metal in the presence of air in the metallurgy of silver?

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172. Out of C and CO, which is a better reducing agent in the lower temperature range in the blast furnace to extract iron from the oxide ore?

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173. Give an example of zone refining of metals

.

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

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

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176. How is wrought iron different from cast iron ?

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177. Discuss the gravity separation method of concentration of ores.

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178. Discuss froth flotation method of concentration of ore.

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179. Discuss the magnetic separation method of concentration of ores.

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180. Discuss leaching method of concentration of ores.

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181. Discuss the process of conversion of Ores into oxides by (1) calcination and(2) roasting

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

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183. Write notes on

carbon reduction process

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184. Explain the following term :

Aluminothermic process

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185. Write short notes on self-reduction process

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186. Electrolytic reduction process is used for the extraction of

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187. Briefly illustrate the principle of various methods of refining of metals with examples.

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188. 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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189. What is hydrometallurgy ? Explain with an example.

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190. Discuss the following methods of purification of metals: i) electrolytic refining ii)zone refining iii)vapour phase refining

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