



CHEMISTRY

BOOKS - SHARAM PUBLICATION

GENERAL PRINCIPLES AND PROCESS OF ISOLATION OF ELEMENTS

Exercise

1. Which of the following is a mineral of iron ?

A. Malachite

B. Cassiterite

C. Pyrolusite

D. Magnetite

Answer:



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2. The ore having two different metal atoms is

A. haematite

B. galena

C. magnetite

D. Copperpyrite

Answer:



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3. In which of the following minerals, aluminium is not present ?

A. Cryolite

B. Mica

C. Feldspar

D. Fluospar

Answer:



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4. In the froth floatation process of concentration of ores, the ore particles float because they:

A. they are light

B. they bear electrical charge

C. their surface is not easily wetted by
water

D. they are insoluble

Answer:



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5. What is the function of potassium ethyl xanthate in froth floatation process?

A. attracted towards water

B. water repellent

C. porous

D. heavier

Answer:



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6. NaCN is sometimes added in the froth floatation process as a depressant, when ZnS and PbS mineral are extracted because

A. $Pb(CN)_2$ gets precipitated without any effect on ZnS

B. ZnS forms a soluble complex

$Na_2[Zn(CN)_4]$ while PbS forms the

froth

C. PbS forms a soluble complex

$Na_2[Pb(CN)_4]$ while ZnS forms froth

D. $Zn(CN)_2$ precipitated without affecting

PbS

Answer:



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7. Which of the following metals can be extracted by smelting?

A. Al

B. Mg

C. Fe

D. None of these

Answer:



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8. The process in which metal oxide is reduced to metal is called

A. Smelting

B. Aluminothermy

C. Hydrothermy

D. No specific name

Answer:



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

A. Oxygen

B. *Mg*

C. *Fe*

D. Nitrogen

Answer:



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10. The main function of roasting is :

A. to get metal from metal oxide

B. oxidation

C. reduction

D. none of the above

Answer:



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11. An ore after levigation is found to have acidic impurities. Which of the following can be used as flux during smelting operation?

A. $CaCO_3$

B. SiO_2

C. HCl

D. both $CaCO_3$ and SiO_2

Answer:



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12. When limestone is heated, carbon dioxide is given off. This operation in metallurgy is known as:

A. Smelting

B. Reduction

C. Calcination

D. Roasting

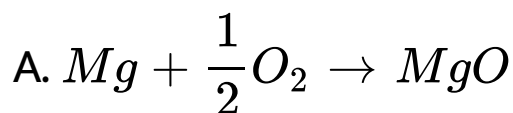
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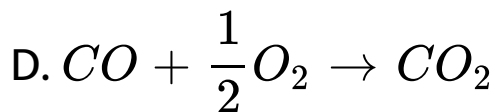
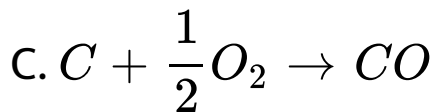
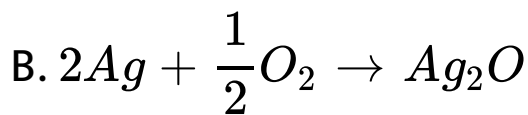


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13. ΔG° - T plot in Ellingham 's diagram

slopes are downward for the reaction.





Answer:



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14. Which of the following pairs of metals is purified by Van Arkel method ?

A. *Ni* and *Fe*

B. *Ga* and *In*

C. *Zr* and *Ti*

D. *Ag* and *Au*

Answer:



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15. Identify an alloy containing a non- metal as a constituent in it.

A. Invar

B. Steel

C. Bell metal

D. Bronze

Answer:



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16. During electrolyte refining of copper some metals present as impurity settle as "anode mud". These are

A. *Sn* and *Ag*

B. *Pb* and *Zn*

C. *Ag* and *Au*

D. *Fe* and *Ni*

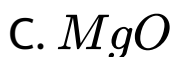
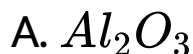
Answer:



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17. According to Ellingham diagram, the oxidation reaction of carbon to carbondioxide

may be used to reduce which one of the following oxides at the lowest temperature ?

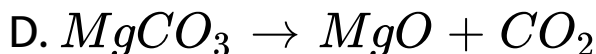
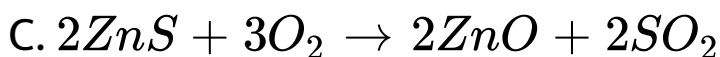
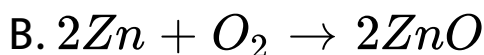


Answer:



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



Answer:



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19. What is benefaction of ore ?



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20. Name one important ore and alloy copper.



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21. How slag is formed in metal extraction ?



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22. What is mean by pyrometallurgy ?



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23. Name three alloys of Copper



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24. The ore that can be concentrated by magnetic separation method, are



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25. What is difference between mineral and ore ?



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26. Name the depressant which is used to separate ZnS from PbS ores in froth-floatation process.



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27. Name two collectors used in froth floatation process.



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28. Name one acidic and one basic flux.



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29. Why do some metals occur in the native state ?



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



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31. 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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32. Which types of ores are roasted ?



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



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34. Why sulphide ores are concentrated by froth floatation process.



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35. Which process is used for refining of metals which are used as Semiconductors ?



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36. What is formed when a flux reacts with a gangue material?



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37. Name three important ores of iron .



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



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39. Fill in the blank and rewrite the whole statement.

Two metals which occur in native state



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40. Fill in the blank and rewrite the whole statement.

A non-metal which shines like a metal and good conductor of electricity is



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41. Fill in the blanks : During electro refining of copper And Metal are present in anode mud.



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42. Fill in the blanks : Is used as reducing agent during smelting.



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43. Fill in the blanks : Froth floatation process is the suitable method of concentration of ores.



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44. Fill in the blanks : A homogeneous mixture of a metal with mercury is called



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45. Fill in the blanks : Flux combines with infusible impurities to form



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46. Fill in the blanks : acts as acidic flux while Acts as a basic flux.



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47. Minerals, from which metal can be extracted economically, are called



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48. Fill in the blanks : The most abundant metal in the earth's crust is



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49. Fill in the blanks : For reduction of metal oxide to metal ΔG must be



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50. Fill in the blanks : Cinnabar and Galena are the ores of and Respectively.



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51. Fill in the blanks : Copper matte contains and



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52. Fill in the blanks : Blister copper contains
..... % of Cu



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53. Fill in the blanks : Conversion of carbonate
ore to metal oxides are done by



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54. Fill in the blanks : In the metallurgical processes for the electro refining of the metal, the anode is made of Metal.



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55. Fill in the blanks : Impurities in the minerals are usually removed by adding



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56. Fill in the blanks : And

Process can remove volatile impurities from ore.



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57. Fill in the blanks : Acidic refractory material is



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58. Fill in the blanks : Name one ore which contains both iron and copper.



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59. The ore that can be concentrated by magnetic separation method, are



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60. Why is aluminium a good reducing agent ?

Give examples.



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61. How does SiO_2 remove impurities of CaO

in an ore ?



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



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



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64. What is the role of silica in the metallurgy of copper?



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65. Give two requirements for vapour phase refining.



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66. What is leaching ? Glve an example.



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67. What do you mean by liquation process of refining of metal ?



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68. Why are Ag and Au remain in anode mud during electrolysis refining of copper ?



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69. Outline the principles of refining metals by the method:

Zone refining



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70. Give an example of Van Arkel method of refining.



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71. How is nickel refined by Mond's process ?



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72. What do you mean by calcination ?



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73. What do you mean by roasting ?



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74. What is difference between calcination and roasting ?



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75. What is the electro chemical principle of metallurgy ?



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76. Write notes on
electrolytic reduction



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77. Write short notes on
Zone refining



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78. Write notes on : Smelting



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79. Outline the principles of refining metals by the method:

Electrolytic refining



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80. Outline the principles of refining metals by the method:

Vapour phase refining





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81. What is difference between calcination and roasting ?



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82. Write the applications of Ellingham diagram.



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