CHEMISTRY

BOOKS - BHARATI BHAWAN

CHEMISTRY (HINGLISH)

METALS AND NONMETALS

Exercises Pick The Correct Option

1. Because of high electropositively, the atoms of metals can easly form

A. positive ions

B. negative ions

C. neutral ions

D. covalent bonds

Answer: A

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2. Metals below hydrogen in the activity series can

A. react with acids to liberate hydrogen ions

B. react with acids to liberate hydrogen gas

C. react with water at ordinary temperture

D. none of these

Answer: D

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3. Sulphide ores are generally concentrated by the :

A. levigation

B. leaching

C. froth floatation

D. calcination

Answer: C

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4. Oxides of metals are generally

A. acidic

B. basic

C. amphoteric

D. neutral

Answer: B

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5. The number of electrons in the outermost shell of a nonmetal can be

A. 1,2,3 or 4

B. 2,3,4 or 5

C. 4,5,6,7 or 8

D. 4,5,0 or 2

Answer: C

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6. The Siderite is the most important ore of

A. aluminium

B. iron

C. copper

D. S_8

Answer: B

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7. Bauxite is the most important ore of

A. aluminium

B. iron

C. copper

D. lead

Answer: C

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Exercises Fill In The Blanks

1. Aluminium is the most abundant metal in the earth's crust.

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2. The reactive metals do not occur in nature in the ____ state.

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3. Electromagents are used to concentrate _____ ores.

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4. Stainless steel contains

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5. Solder is an alloy of

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6. Hard steel is heated to high temperature and then suddenly cooled in oil. The process is known as

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7. _____ is the best conductor of electricity.

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8. In the extraction of aluminium from bauxite _____ is added to lower the melting point of bauxite.

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Exercises True T Or False F

1. The poorest conductor among metals is lead,.

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2. All metals react with water with the same activity.

(TRUE / FALSE)

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3. Sulphure dissolves in water with the same activity.

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4. The elements having propeties lying between the properties of metals and nonmetals are called metalloids.

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5. Two metals are melted together. The resulting mass is cooled to solidify. The solid is called an alloy.

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Very Short Answer Questions

1. Name two metals and two nonmetals.

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2. (a) Define the terms (i) mineral (ii) ore and (iii) gangue.

(b) What is meant by the concentration of ore?

(c) Name one ore of copper (other than

cuprite).White compound of copper is present in this ore? Also, write its chemical formula.

3. Why are nonmetals electronegative in nature ?

4. Why are metals called electropositive elements?

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5. Which of the following elements is a metal ?

$_{}(11)^{23}X \quad {}_{9}^{19}Y$

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6. What is meant by activity series of metals ?

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7. Arrange Ca,Zn,Ba,Fe,Au,Ag and Cu in order of decreasing reactivity.

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8. Explain why silver does not displace hydrogen from a dilute acid solution .

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9. What is the most common property of the metals lying at the bottom of the reactivity series ?

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10. An element X on reacting with oxygen forms an oxide X_2O . This dissovles in water and truns blue litmus red. State whether the element X is a metal or nonmetal.

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11. An iron knife dipped in a blue copper sulphate solution turns the blue solution light green. Why ?

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12. Name two allotropes of sulphur.

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13. Give the chemical name of the slag produced in the blast furnace during the extraction of iron.

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14. what is an amalgam?

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15. What happens when aluminium nitride reacts with water ?

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16. What is obtained when graphite is heated under high pressure in the presence of a catalyst ?

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17. Name one alloy each of iron and aluminium.

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18. Why is cryolite added to bauxite in the extraction of aluminium ?

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19. What is galvanization ?

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20. Write the molecular formula of sulphur molecule.

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21. Name the oxide ore of aluminium.

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22. Name the constituents of an alloy called German silver.

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23. A given nonmetal forms sulphuric acid on reacting with nitric acid. Indentify the nonmetal.

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24. Write one constituent each of brass and bronze that is not common to both.

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25. Which two major constituents form th alloy duralumin ?

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26. What would happen to the roadside iron railings if they are not pained ? Why does it happen so ?

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27. Define vulcanization.

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28. Name two metals which can displace hydrogen from dil. H_2SO_4 and two metals which cannot do so.

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29. Name the reducing agent which reduces the iron ore in the blast furnace.

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30. Does copper react with dilute hydrochloric acid ?

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31. Which one is more reactive : copper or zinc ?

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32. Is lead a very good conductor of electricity ?

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33. Why is silver a costly metal ?

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34. Name the liquied in which gold dissolves.

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35. Name one use of sulphur.

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36. In what respect does graphite resemble a metal ?

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37. Give reasons why metals are good conductors , whereas nonmetals do not.

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38. Name two significant properties of a metal.

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39. Explain why metals replace hydrogen from acids, whereas nonmetals do not.

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40. Sodium hydroxide should not be stored in aluminium containers. Why ?

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41. Explain why zinc metal can displace copper from copper sulphate solution but copper displace zinc from zinc sulphate solution.

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42. Why is sodium kept under kerosene ?

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43. Explain why sodium is not found in the native state.

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44. State any three chemical characteristics of a nonmetal

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45. How are metals refined by electrolytic process ?

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46. Name three nonmetallic oxides which are acidic . What happens when they are dissolved in water ?

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47. State any four uses of aluminium.

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48. From among the following , choose metals and nonmetals. State one of the properties on the basis of which you have made your choice.

(i) Graphite (ii) sodium (iii) Sulphur (iv) Helium

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49. What happens when NH_4OH is added to an aqueous solution of aluminium chloride ?

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50. What is rust ? How is it formed ?

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51. What do you mean by corrosion of metals ?

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52. Explain why iron sheets are coated with zinc.

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53. Mention any one method by which corrosion of metals can be prevented.

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54. What is an alloy ? Write the composition of brass or bronze.

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55. What is stainless steel? Mention two of its properties.

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56. Give the equation(s) to show what happens when NH_4OH is gradually added to a solution of copper sulphate.

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57. what is vulcanization of rubber ?

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58. Mention a reaction showing the reducing property of SO_2 .

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59. Why is hydrogen, a nonmetal, is included in the activity series of metals ?

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60. What is amalgam ? How does it differ from alloy ?

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61. Explain why alloy is a uniform mixture.

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62. Show by means of chemical equations how roasting can convert a sulphide ore into oxide.

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63. Name the process that is used to concentrate sulphide ore. Describe briefly two stages that are involved in the conversion of concnetrated sulphide ore into corresponding metal.

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64. What is an alloy ? Write the composition of an alloy called bronze. Give - two uses of bronze.

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65. Write the chemical formula of cryolite. What is the purpose of adding it in the Hall's process of extraction of aluminium ?

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66. Why is sulphur used in the vulcanization of rubber ?

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Short Answer Questions

1. How do we classify elements into metals and nonmetals on the basis of electronic configurations of their atoms ? Give two examples to support your answer.

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Long Answer Questions

1. Describe two methods for the concentration of ores.

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2. Explain the following terms :

(a) Metallurgy (b) Flux (c) Calcination (d) Roasting

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3. Compare and contrast the properties of metals and nonmetals.

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4. Explain the method used for the extraction of aluminium from its ore. Illustrate your answer with the help of a neat, labelled diagram.

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5. How does aluminium react with the following substances ?

(a) water (b) Sulphuric acid

© Carbon monoxide (d) Ferric oxide

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6. Name the chief ore of iron. What are the three raw materials used in the production of iron from its ore ? With the help of a labelled

diagram of a blast furnace, describe the extraction of iron from its ore.

Write the chemical equations of the reactions involved in the furnace.

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7. What is allotropy ? Name any four allotropic modifications of sulphur . Describe the action of heat on sulphur.

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8. Draw a labelled diagram of Frasch process for mining sulpur. State the function of the following in the frasch process.

(a) Superheated water (b) Air at high pressure

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