CHEMISTRY

BOOKS - S CHAND IIT JEE FOUNDATION

METALS AND NON METALS

Question Bank 15 Fill In The Blanks

1. ___ are elements which can form positive ions by the loss of electrons.

Watch Video Solution

2. ___ are elements which can accept one or more electrons and form negative ions.

Watch Video Solution

3. The compounds of metals in which form the metals occur naturally are called ___ .

Watch Video Solution

4. An ____ is a mixture of minerals in the earth's crust from which it is profitable to extract a metal.

Watch Video Solution

5. Waste materials present in an ore are called ____ or ____ .

Watch Video Solution

6. The property of metals by which they can be beaten into thin sheets is called ___ .

Watch Video Solution

7. The property of metal by which it can be drawn into wires is called ___ .

Watch Video Solution

8. The property of metals producing a ringing sound when struck is called ____ .

Watch Video Solution

9. Metals can resist strain without breaking because of their hig ____ .

Watch Video Solution

10. A homogeneous mixture of two or more metals or a metal and a non-metal having metallic properties is called an ____ .

Watch Video Solution

11. Elements which possess characters of both inetals and non-metals are called ____ .

Watch Video Solution

12. The process of heating concentrated ore to a high temperature in excess air is called ____ .

Watch Video Solution

13. The process of strongly heating a concentrated ore in the absence of air to a temperature that is not sufficient to melt the ore is called ____ .

Watch Video Solution

14. The process of converting a metallic oxide into a metal by removing the oxygen from the metallic oxide is called ___ or ___ .

Watch Video Solution

15. The scientific process of obtaining pure metals from their ores by applying physical and chemical processes is termed as ___ .

Watch Video Solution

16. Metals like silver, gold and platinum which do not corrode and do not react with oxygen even on strong heating are called ___ metals.

Watch Video Solution

17. Metals react with oxygen to form ___ .

Watch Video Solution

18. Non-metals react with oxygen to form ___ or ___ .

Watch Video Solution

19. The list in which metals are arranged vertically in the decreasing order of chemical reactivity is called the ____ series.

Watch Video Solution

20. Highly reactive metals are extracted by the process of ____ .

Watch Video Solution

21. Bronze is an alloy of ____, ____ and ____ .

Watch Video Solution

22. A reaction in which a more active metal displaces a less active metal from the solution of its salt is called a ____ reaction.

Watch Video Solution

23. Rusting of iron takes place only when both____ and ____ are present.

Watch Video Solution

24. Metals react with acids to produce ____ gas.

Watch Video Solution

Question Bank 15 Answer True Or False

1. All metals are solids.

Watch Video Solution

2. The oxides of non-metals are either acidic or neutral in nature.

Watch Video Solution

3. Non-metals do not react with dilute acids.

Watch Video Solution

4. Silver is a poor conductor of electricity while mercury is a very good conductor.

 Watch Video Solution

5. Diamond and boron being non-metals are soft.

 Watch Video Solution

6. Carbon and boron being non-metals have low melting and boiling points.

7. Aluminium is the most abundant metal on earth's crust.

8. Smelting is a reduction process, in which the metal oxide loses its oxygen leaving behind the metal.

Watch Video Solution

9. Magnetic ores can be easily separated by gravity separation method.

Watch Video Solution

10. Aluminium is extracted from alumina (Al_2O_3) by electrolysis.

Watch Video Solution

Question Bank 15

1. Name the constituents elements of solder along with composition ?

Watch Video Solution

2. This is a list of metals in decreasing order of reactivity:

Sodium, calcium, magnesium, zinc, iron, lead, copper, gold.

Which metal is stored in kerosene oil?

Watch Video Solution

3. This is a list of metals in decreasing order of reactivity:

Sodium, calcium, magnesium, zinc, iron, lead, copper, gold.

(i) Which metals react with cold water?

(ii) Which gas is given off in this reaction?

Watch Video Solution

4. This is a list of metals in decreasing order of reactivity:

Sodium, calcium, magnesium, zinc, iron, lead, copper, gold.

(i) Name one metal that will not react with cold water but will react with steam.

(ii) Name two products of this reaction.

Watch Video Solution

5. This is a list of metals in decreasing order of reactivity:

Sodium, calcium, magnesium, zinc, iron, lead, copper, gold.

(i) Name one metal that reacts slowly with dil. sulphuric acid.

(ii) Name two products of this reaction.

Watch Video Solution

6. This is a list of metals in decreasing order of reactivity:

Sodium, calcium, magnesium, zinc, iron, lead, copper, gold.

Which of the metals will not react with oxygen when heated?

Watch Video Solution

7. This is a list of metals in decreasing order of reactivity:

Sodium, calcium, magnesium, zinc, iron, lead, copper, gold.

Which metal forms an oxide when heated in air but does not react with acid?

Watch Video Solution

8. Tabulate the differences between the chemical properties of metals and non-metals with respect to the following properties.

Reaction with oxygen, reaction with dil. acid, electrolysis

Watch Video Solution

9. Copy and complete the following table

Metal	Mineral in the ore	Formula
1. Aluminium (Al)	Bauxite Cryolite	$Al_2O_3.2H_2O$ $Na_3.AlF_6$
2. —	Lead sulphide	—
3. —	Argentite (Silver sulphide)	—
4. —	Red Haematite Magnetite	—
5. —	Marble Gypsum	—
6. —	Zinc blende Calamine	—

Watch Video Solution

10. Two materials A and B are heated separately in air. The product formed is dissolved in water. How will you identify which one is a metal?

Watch Video Solution

11. You are given a piece of charcoal. How will you find out whether it forms basic oxide or acidic oxide.

Watch Video Solution

12. One day Kavita went to a jewellers shop with her mother. Her mother gave an old metal jewellery to the goldsmith to polish. Next day when they brought the jewellery back, they found that there was a slight loss in its weight. Can you suggest a reason for the loss in weight?

Watch Video Solution

13. (i) Describe the reaction by which iron gets rushed.

(ii) Does copper also get rusted? A greenish deposit is seen on the surface of copper vessels.

Watch Video Solution

14. What is added to steel to make it stainless steel?

Watch Video Solution

15. State two necessary conditions for rusting.

Watch Video Solution

16. State two ways by which rusting can be prevented.

Watch Video Solution

17. (i) What is an alloy?

(ii) An alloy usually has some property which makes it particularly useful. What is the special property of (i) Duralumin (ii) Type metal

Watch Video Solution

18. What is the most important chemical process in the extraction of any metal? State how the essential step is carried out in the extraction of iron.

Watch Video Solution

19. Non-metals are poor conductors of electricity. Which allotrope of the non-metal carbon conducts electricity.

Watch Video Solution

20. How many valence electrons are present in following elements ?

(i) sodium

(ii) aluminium

(iii) carbon

Watch Video Solution

21. How many valence electrons are present in non-metals?

Watch Video Solution

22. Which metals do not corrode casily?

Watch Video Solution

23. Name two metals which will displace hydrogen from dilute acids, and two metals which will not displace hydrogen from dilute acids.

Watch Video Solution

24. Which gas is produced when dilute hydrochloric acid is added to a reactive metal?

Write the chemical reaction when iron reacts with dilute H_2SO_4.

Watch Video Solution

25. You are given a hammer, a battery, a bulb, wires and a switch.

(a) How could you use them to distinguish between samples of metals and non-metals?

(b) Assess the usefulness of these tests in distinguishing between metals and non – metals.

Watch Video Solution

26. What do you mean by amphoteric oxides? Give examples along with reaction.

Watch Video Solution

27. Why is copper used to make hot water tanks but steel (an alloy of iron) is not used?

Watch Video Solution

28. State two ways by which rusting can be prevented ?

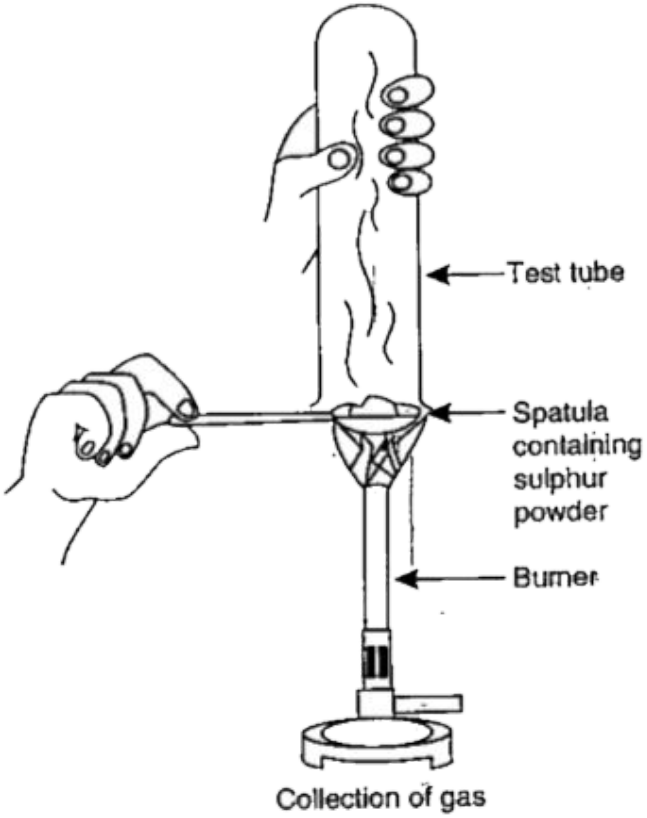
Watch Video Solution

29. What type of oxides are formed when non-metals combine with oxygen?

Watch Video Solution

30. Sameer took sulphur powder on a spatula and heated it. He collected the gas evolved by

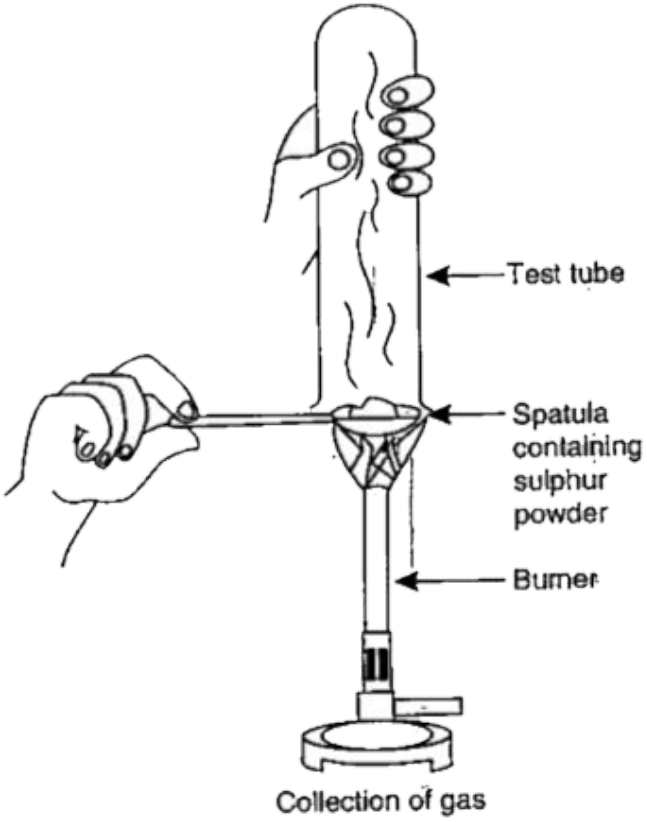
inverting a test tube over it as shown in the figure.



What will be the action of gas on dry litmus paper?

Watch Video Solution

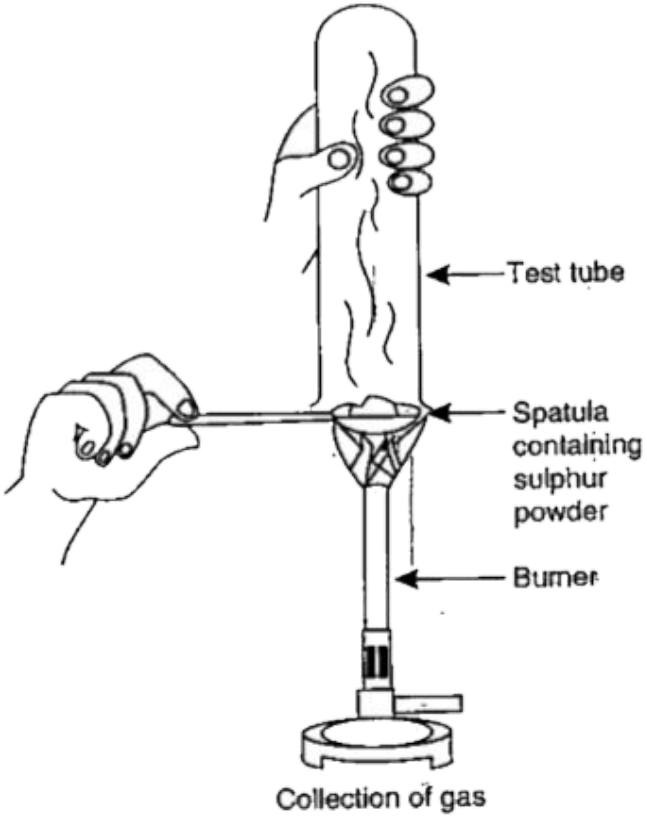
31. Sameer took sulphur powder on a spatula and heated it. He collected the gas evolved by inverting a test tube over it as shown in the figure.



What will be the action of gas on moist litmus paper?

Watch Video Solution

32. Sameer took sulphur powder on a spatula and heated it. He collected the gas evolved by inverting a test tube over it as shown in the figure.



Write a balanced chemical equation for the reaction taking place.

Watch Video Solution

33. You must have seen tarnished copper vessels being cleaned with lemon or tamarind juice. Explain why these sour substances are effective in cleaning the vessels.

Watch Video Solution

34. Why does magnesium ribbon start floating in hot water?

Watch Video Solution

35. Why do gallium and cesium melt in our palm?

Watch Video Solution

36. A metal with shining appearance reacts with hot water and also with dilute hydrochloric acid evolving hydrogen gas. Suggest giving reason why this metal cannot be copper.

Watch Video Solution

37. From the set of metals- zinc, iron, copper and silver, select the following giving equation for reaction.

Two metals which will liberate hydrogen from water.

Watch Video Solution

38. From among the set of metals-sodium, zinc, iron, copper and silver, select the following giving equation for reaction.

One metal which is used to prepare hydrogen gas in the laboratory.

Watch Video Solution

39. From among the set of metals-sodium, zinc, iron, copper and silver, select the following giving equation for reaction.

One metal which will displace copper from copper sulphate solution.

Watch Video Solution

40. From among the set of metals-sodium, zinc, iron, copper and silver, select the following giving equation for reaction.

One metal which will not displace copper from copper sulphate solutions.

Watch Video Solution

41. Name one metal in following fitting the given description. Also, write the equation of the reaction.

A metal which floats on water, reacts with it and forms an alkali.

Watch Video Solution

42. Name one metal in following fitting the given description. Also, write the equation of the reaction.

A metal that displaces silver from silver nitrate solution.

Watch Video Solution

43. Name one metal in following fitting the given description. Also, write the equation of the reaction.

A metal which is used for galvanising iron.

Watch Video Solution

44. Name one metal in following fitting the given description. Also, write the equation of the reaction.

A metal that reacts with oxygen without burning.

Watch Video Solution

45. Name one metal in following fitting the given description. Also, write the equation of the reaction.

A metal that burns in oxygen with a bright light.

Watch Video Solution

46. Zinc is extracted from zinc blende. The zinc blende is roasted. The solid product is mixed with coke in a blast furnace from which zinc vapours emerge.

What is the zinc compound in zinc blende?

Watch Video Solution

47. Zinc is extracted from zinc blende. The zinc blende is roasted. The solid product is mixed with coke in a blast furnace from which zinc

vapours emerge.

Write the equation for the roasting of zinc blende.

Watch Video Solution

48. Zinc is extracted from zinc blende. The zinc blende is roasted. The solid product is mixed with coke in a blast furnace from which zinc vapours emerge.

What is the type of chemical reaction carried out after roasting in order to obtain zinc?

Watch Video Solution

49. Zinc is extracted from zinc blende. The zinc blende is roasted. The solid product is mixed with coke in a blast furnace from which zinc vapours emerge.

What is the purpose of using coke?

Watch Video Solution

50. Zinc is extracted from zinc blende. The zinc blende is roasted. The solid product is mixed

with coke in a blast furnace from which zinc vapours emerge.

What is the reducing agent in the extraction?

 Watch Video Solution

51. Zinc is extracted from zinc blende. The zinc blende is roasted. The solid product is mixed with coke in a blast furnace from which zinc vapours emerge.

What is the name of the alloy formed by copper and zinc?

Watch Video Solution

52. From the metals copper, iron, magnesium, sodium and zinc, select from metal which does not react with dilute hydrochloric acid

Watch Video Solution

53. From the metals copper, iron, magnesium, sodium and zinc, select from metal which can form 2^+ and 3^+ ions

Watch Video Solution

54. From the metals copper, iron, magnesium, sodium and zinc, select from metal which has a oxide that reacts with both acids and alkalies

Watch Video Solution

55. From the metals copper, iron, magnesium, sodium and zinc, select from metal which does not react with cold water but reacts with steam when heated.

Watch Video Solution

56. From the metals copper, iron, magnesium, sodium and zinc, select from metal which arrange the metals in decreasing order of reactivity.

Watch Video Solution

57. X is an element in the form of a powder. X burns in oxygen and the product is soluble in water. The solution is tested with litmus. Write

down only the word, which will correctly complete the following sentence.

If X is a metal, then the litmus will turn ____

Watch Video Solution

58. X is an element in the form of a powder. X burns in oxygen and the product is soluble in water. The solution is tested with litmus. Write down only the word, which will correctly complete the following sentence.

If X is a non-metal, then the litmus will turn

____

Watch Video Solution

59. X is an element in the form of a powder. X burns in oxygen and the product is soluble in water. The solution is tested with litmus. Write down only the word, which will correctly complete the following sentence.

If X is a reactive metal, then ____ will be

evolved, when X reacts with dilute sulphuric acid.

Watch Video Solution

60. X is an element in the form of a powder. X burns in oxygen and the product is soluble in water. The solution is tested with litmus. Write down only the word, which will correctly complete the following sentence.

If X is a metal it will form ____ oxide, which will form ____ solution with water.

Watch Video Solution

61. X is an element in the form of a powder. X burns in oxygen and the product is soluble in water. The solution is tested with litmus. Write down only the word, which will correctly complete the following sentence.

If X is a non-metal it will not conduct electricity unless it is carbon in the form of

____

Watch Video Solution

62. List 1 contains metals/alloys 1, 2, 3, 4, 5 and list 2 contains their uses A, B, C, D, E.

List 1 Metal/Alloy	List 2 Uses
1. Aluminium	A. Steel making
2. Lead	B. Aeroplane wings
3. Brass	C. Galvanizing
4. Iron	D. Radiation shield
5. Zinc	E. Electrical fittings

Complete the following table, matching the metals with their correct uses.

Metal/Alloy	1	2	3	4	5
Uses					

Watch Video Solution

63. A to F below relate to the source and extraction of either Zinc or Aluminium.

A. Bauxite B. Coke

C. Cryolite D. Froth floatation

E. Sodium hydroxide solution F. Zine blende

Write down the three letters each from the above list which are relevant to Zinc

Watch Video Solution

64. A to F below relate to the source and extraction of either Zinc or Aluminium.

A. Bauxite B. Coke

C. Cryolite D. Froth floatation

E. Sodium hydroxide solution F. Zine blende

Write down the three letters each from the above list which are relevant to Aluminium

Watch Video Solution

65. A to F below relate to the source and extraction of either Zinc or Aluminium.

A. Bauxite B. Coke

C. Cryolite D. Froth floatation

E. Sodium hydroxide solution F. Zine blende

Fill in the blanks using the most appropriate words from A to F.

The ore from which aluminium is extracted must first be treated with _____ so that pure aluminium oxide can be obtained.

Watch Video Solution

66. A to F below relate to the source and extraction of either Zinc or Aluminium.

A. Bauxite B. Coke

C. Cryolite D. Froth floatation

E. Sodium hydroxide solution F. Zine blende

Fill in the blanks using the most appropriate words from A to F.

Pure aluminium oxide is dissolved in ____ to make a conducting solution.

Watch Video Solution

67. A to F below relate to the source and extraction of either Zinc or Aluminium.

A. Bauxite B. Coke

C. Cryolite D. Froth floatation

E. Sodium hydroxide solution F. Zine blende

Write the formula for cryolite

Watch Video Solution

68. From the list of characteristics given below, select the five which are relevant to non-metals and their compounds.

Write the letters corresponding to the correct characteristics.

A. Ductile

B. Conduct electricity

C. Brittle

D. Acidic oxides

E. Basic oxides

F. Discharged at anode

G. Discharged at cathode

H. Ionic chlorides

I. Covalent chlorides

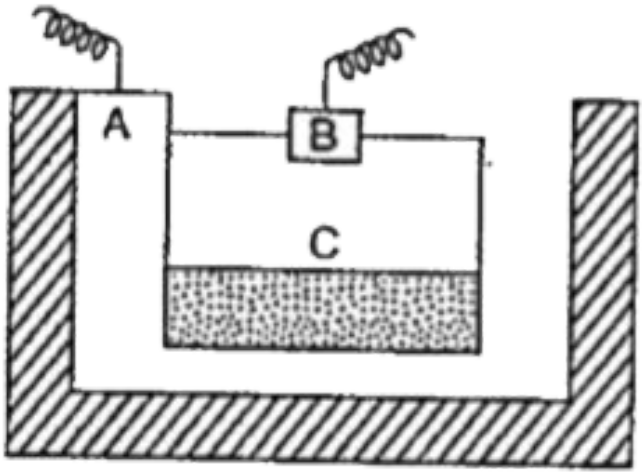
J. Reaction with dilute sulphuric acid yields hydrogen.

K. 1, 2 or 3 valence electrons

L. 5, 6 or 7 valence electrons

Watch Video Solution

69. The diagram shows the sketch of an electrolytic cell used in the extraction of aluminium.

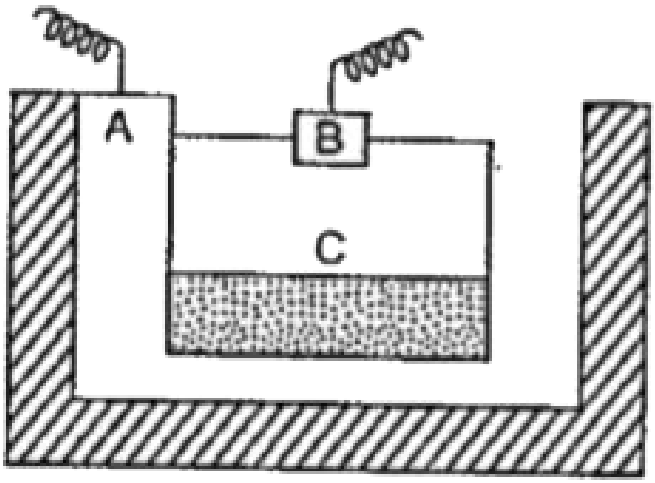


What is the substance of which the electrodes A and B are made?

Watch Video Solution

70. The diagram shows the sketch of an electrolytic cell used in the extraction of

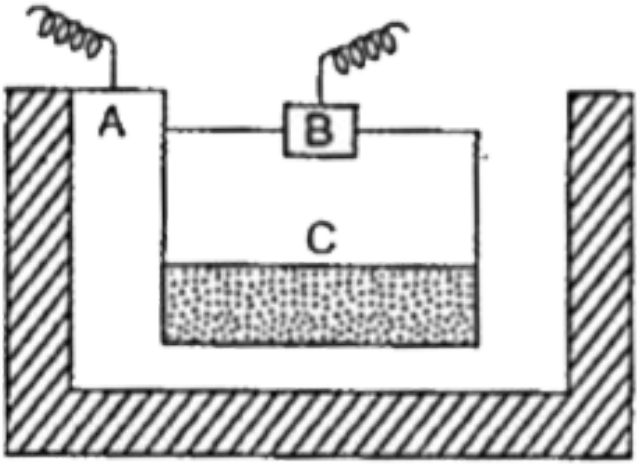
aluminium.



At which electrode (A or B) is the aluminium formed?

Watch Video Solution

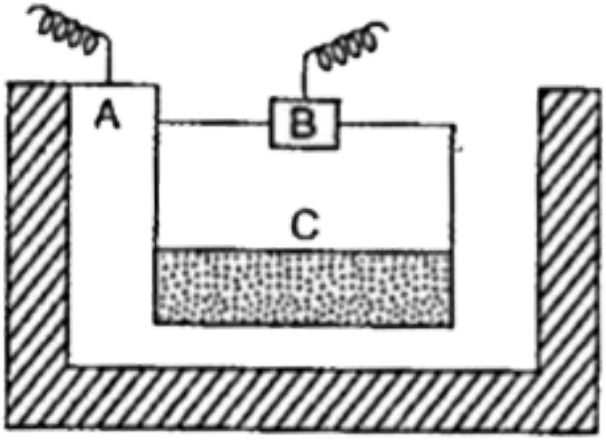
71. The diagram shows the sketch of an electrolytic cell used in the extraction of aluminium.



What are the two aluminium compounds in the electrolyte C?

Watch Video Solution

72. The diagram shows the sketch of an electrolytic cell used in the extraction of aluminium.



Why is it necessary for electrode 'B' to be continuously replaced?

Watch Video Solution

73. In the electrolytic refining of a metal M, what would you take as the anode, the cathode and the electrolyte?

Watch Video Solution

74. On placing a piece of zinc metal in a solution of mercuric chloride, it acquires a shining silvery surface but when it is placed in a solution of magnesium sulphate, no change is observed. Explain.

Watch Video Solution

75. Name two metals that do not corroide easily. Give an example in support of each of the following statements.

(i) Corrosion of metals is an advantage

(ii) Corrosion of a metal is a serious problem

Watch Video Solution

76. Food cans are coated with tin and not with zinc because

A. Zinc is costlier than tin

B. Zinc has a higher melting point than tin

C. Zinc is more reactive than tin

D. Zinc is less reactive than tin

Answer: A::C

 Watch Video Solution

77. Four students A, B, C, and D took aqueous solutions of zinc sulphate and iron sulphate in two test tubes I and II and dropped metal

pieces of Iron and Zinc in the two solutions. After several hours, they made observations and recorded their findings in the form of a table given below:

Observation	*Metal*	*Solution*	*Change in colour of the solution*	*Deposit/ Residue obtained*
By A	Fe	$ZnSO_4$	turned green	Silver grey coating
	Zn	$FeSO_4$	no change	no change

By B	Fe	$ZnSO_4$	no change	black residue
	Zn	$FeSO_4$	colour faded	grey coating
By C	Fe	$ZnSO_4$	no change	no change
	Zn	$FeSO_4$	turned colourless	black residue
By D	Fe	$ZnSO_4$	no change	grey residue
	Zn	$FeSO_4$	no change	black residue

Who reported the correct observation?

A. A

B. B

C. C

D. D

Answer: C

Watch Video Solution

78. Which of the following pairs will give displacement reactions?

A. NaCl solution and copper metal

B. $MgCl_2$ solution and aluminium metal

C. $FeSO_4$ solution and silver metal

D. $AgNO_3$ solution and copper metal

Answer: D

Watch Video Solution

79. Which of the following methods is suitable for preventing an iron frying pan from rusting?

A. applying grease

B. applying paint

C. applying a coating of zinc

D. all of the above

Answer: C

Watch Video Solution

80. An element reacts with oxygen to give a compound with a high melting point. This compound is also soluble in water. The element is likely to be:

A. calcium

B. carbon

C. silicon

D. iron

Answer: A

Watch Video Solution

81. A piece of granulated zinc was dropped into copper sulphate solution. After some time, the colour of the solution changed from:

A. Colourless to blue

B. blue to colourless

C. Yellow to light green

D. blue to white

Answer: B

Watch Video Solution

82. Give reason:

Metals like palladium, silver and gold are used to make jewellery

Watch Video Solution

83. Give reason:

Sodium, potassium and lithium are stored

under oil

Watch Video Solution

84. Give reason:

Aluminium is a highly reactive metal, yet it is used to make utensils for cooking

Watch Video Solution

85. give reason for the following:

Carbonate and sulphide ores are usually

converted into oxides during the process of extraction of metals.

Watch Video Solution

86. Give reason:

Metals are regarded as electropositive elements

Watch Video Solution

87. Give reason:

Carbon is not used for making aluminium from aluminium oxide

Watch Video Solution

88. Give reason:

Metals conduct electricity

Watch Video Solution

89. Metallic oxides of zinc, magnesium and copper were heated with the following metals.

Metal	Zinc	Magnesium	Copper
Zinc oxide Magnesium oxide Copper oxide			

In which cases will you find displacement reactions taking place?

Watch Video Solution

90. A student has been collecting silver coins and copper coins. One day she observed a

black coating on silver coins and a green coating on copper coins. Which chemical phenomenon is responsible for these coatings ? Write the chemical names of black and green coatings ?

Watch Video Solution

91. A metal 'M' has the electronic configuration is 2, 8, 3 - and occurs in nature as $M_2O_32H_2O$. It is more reactive than Zinc. Answer the

following question:

Name the metal 'M'

Watch Video Solution

92. Rusting of iron involves

A. oxidation

B. reduction

C. decompositions

D. displacement

Answer: A

 Watch Video Solution

93. Which of the following metals can displace hydro-gen from dilute acids?

A. Zinc

B. Gold

C. Copper

D. Silver

Answer: A

 Watch Video Solution

94. The ore of which of the following metals can be concentrated by hydraulic washing?

A. Tin

B. Sodium

C. Iron

D. Manganese

Answer: A

Watch Video Solution

95. Which of the following alloys is used for making magnets?

A. Duralumin

B. Stainless steel

C. Alnico

D. Magnalium

Answer: C

Watch Video Solution

96. Match the following:

	Alloy	Composition
A.	Bronze	1. Lead, antimony, tin
B.	Brass	2. Copper, zinc, nickel
C.	German silver	3. Copper, zinc
D.	Type metal	4. Copper, tin

A. A-1 B-4 C-3 D-2

B. A-2 B-1 C-4 D-3

C. A-3 B-3 C-1 D-4

D. A-4 B-3 C-2 D-1

Answer: D

97. Which of the following metals was first discovered by man?

A. Bronze

B. Silver

C. Iron

D. Copper

Answer: D

Watch Video Solution

98. When an iron nail gets rusted, iron oxide is formed

A. without any change in the weight of the nail.

B. with increase in the weight of the nail

C. with decrease in the weight of the nail

D. without any change in colour or weight of the nail

Answer: B

Watch Video Solution

99. Of the following metals which one pollutes the air of a big city?

A. Copper

B. Chromium

C. Lead

D. Cadmium

Answer: C

Watch Video Solution

100. Which of the following is an incorrect statement?

A. Alloyed iron is more durable

B. Alloyed iron is more shining

C. Alloyed iron is more prune to rusting

D. Rust is loosely attached to the metal surface.

Answer: C

Watch Video Solution

101. Which of the following is not a correct statement?

A. Non-metals melt at low temperature

B. Non-metals are generally bad conductors of heat and electricity.

C. Non-metals are non-sonorous

D. Non-metals are malleable

Answer: D

Watch Video Solution

102. Rust is

A. a mixture of Fe_2O_3 and $Fe(OH)_3$

B. a mixture of FeO and $Fe(OH)_2$

C. Fe_2O_3 only

D. a mixture of $Fe_2O_3.3H_2O$ and FeO

Answer: D

Watch Video Solution

103. The metal that is present of photo films is

A. mercury

B. platinum

C. magnesium

D. silver

Answer: D

 Watch Video Solution

104. Amalgams are

A. alloys which contain carbon

B. alloys which have great resistance to abrasion

C. alloys which contain mercury as one of the contents

D. highly coloured alloys

Answer: C

 Watch Video Solution

105. Identify the correct order of reactivity of metals among the following.

A. $Cu < Fe < Zn < AI < Na$

B. $Fe < Zn < Cu < Na < Al$

C. $Zn < Cu < Fe < Al < Na$

D. $Cu < Zn < Al < Na < Fe$

Answer: A

Watch Video Solution

106. Brass gets discoloured in air because of the presence of which of the following gases in air?

A. Carbon dioxide

B. Oxygen

C. Hydrogen sulphide

D. Nitrogen

Answer: C

 Watch Video Solution

107. Bell metal is an alloy of

A. brass and nickel

B. zinc and copper

C. tin and copper

D. nickel and copper

Answer: C

Watch Video Solution

108. Which metal among the following is present in green plants?

A. Zinc

B. Aluminium

C. Magnesium

D. Tin

Answer: C

Watch Video Solution

109. Which metal among the following is present in human blood?

A. Titanium

B. Mercury

C. Gold

D. Iron

Answer: D

Watch Video Solution

110. Which of the following are the ingredients of gun metal?

A. Iron, Tin

B. Copper, Tin

C. Iron, Brass, Tin

D. Iron, Zinc, Titanium

Answer: B

Watch Video Solution

111. Which of the following pairs does not contain a coinage metal?

A. Copper and gold

B. Silver and gold

C. Zinc and gold

D. Copper and silver

Answer: C

Watch Video Solution

112. Which of the following is the lightest metal?

A. Mercury

B. Silver

C. Lithium

D. Lead

Answer: C

 Watch Video Solution

113. German silver is an alloy of

A. Copper, nickel and silver

B. Silver, copper and aluminium

C. Zinc, copper and nickel

D. Silver, zinc and copper

Answer: C

 Watch Video Solution

114. Which of the following is a non-metal that remains liquid at room temperature?

A. Bromine

B. Chlorine

C. Helium

D. Phosphorus

Answer: A

Watch Video Solution

115. Identify the metalloid among the following:

A. Sodium

B. Silicon

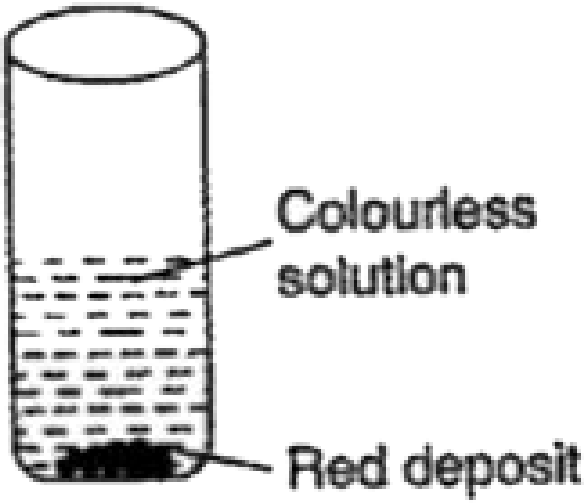
C. Sulphur

D. Silver

Answer: B

Watch Video Solution

116. When few granules of sample X are added to a solution of copper sulphate, the changes observed are shown in the figure.



Identify sample X and red deposit.

A. Fe, Zn

B. Zn, Cu

C. Cu, Zn

D. Fe, Cu

Answer: B

Watch Video Solution

117. The border line elements, which neither fit with metals nor with non-metals are known as

A. Metalloids

B. Isotopes

C. Allotropes

D. Alloys

Answer: A

Watch Video Solution

118. When dilute hydrochloric acid is added to granulated zinc placed in atest tube, the observation made is :

A. the surface of the metal turns shining

B. the reaction mixture turns milky

C. odour of chlorine is observed

D. a colourless and odourless gas evolves with bubbles.

Answer: D

Watch Video Solution

119. Identify the incorrect statement about the alloys among the following:

A. An alloy is a homogeneous mixture of a metal with another metal or non-metals

B. The melting point of an alloy is higher than that of its constituent elements

C. Alloys are corrosion resistant

D. Alloys have more shining than their constituent elements.

Answer: B

Watch Video Solution

120. Which of the following statements is incorrect?

A. Metals are malleable

B. All metal oxides are acidic in nature

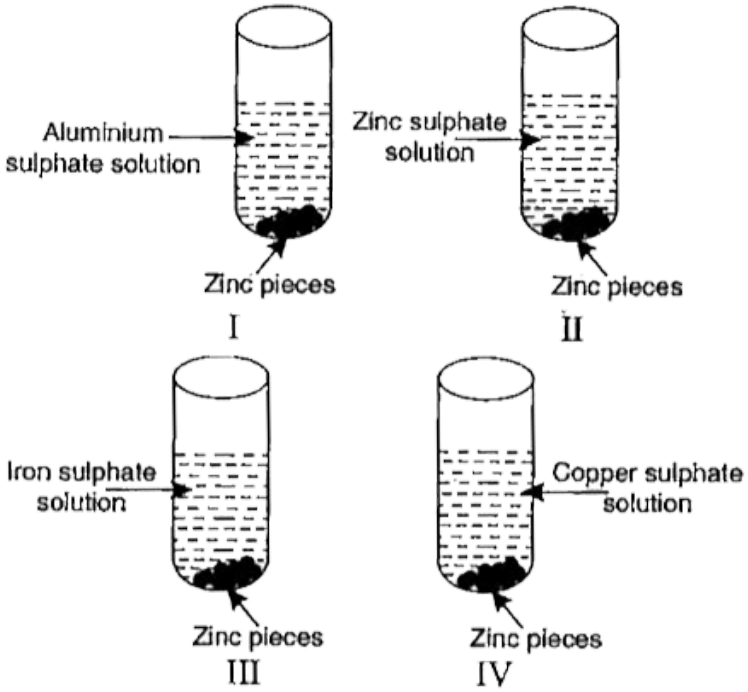
C. Metals have lustre

D. Metal atoms have 1, 2 or 3 electrons in the outermost shell.

Answer: B

Watch Video Solution

121. Zinc pieces were placed in each of the four test tubes containing different salt solutions as shown below:



In which cases will colour change be observed in solutions?

A. I and II

B. I and III

C. III and IV

D. I and IV

Answer: D

Watch Video Solution

122. Four metals Zn, Fe, Cu and Al are taken and added to the following solutions one by one. The results obtained are tabulated below:

Metal	$ZnSO_4(aq)$	$FeSO_4(aq)$	$CuSO_4(aq)$	$Al_2(SO_4)_3(aq)$
Zn	—		Displaced	Displaced
	No reaction			
Fe	No reaction	—	Displaced	No reaction
Cu	No reaction	No reaction	—	No reaction
Al	Displaced	Displaced	Displaced	—

From the above data, the decreasing order of- reac- tivity of metals is

A. $Al > Cu > Fe > Zn$

B. $Al > Zn > Fe > Cu$

C. $Al > Zn > Cu > Fe$

D. $Al > Fe > Cu > Zn$

Answer: B

Watch Video Solution

123. Draw a concept chart showing the processes involved during extraction of metals (metallurgy).

Watch Video Solution

124. Write balanced chemical equations for the following reaction

Reduction of Iron (III) oxide by carbon monoxide

Watch Video Solution

125. Write balanced chemical equations for the following reaction

Calcium bicarbonate and dilute hydrochloric acid

Watch Video Solution

126. Write balanced chemical equations for the following reaction

Reaction of aluminium powder with hot and concentrated caustic soda solution

 Watch Video Solution

127. Write balanced chemical equations for the following reaction

Reaction of zinc with the following:

Sodium hydroxide solution

 Watch Video Solution

128. Write balanced chemical equations for the following reaction

Reaction of zinc with the following:

Dilute sulphuric acid

Watch Video Solution

129. Write balanced chemical equations for the following reaction

Reaction of zinc with the following:

Copper sulphate solution

Watch Video Solution

130. Write balanced chemical equations for the following reaction

Reduction of copper oxide by hydrogen

Watch Video Solution

131. Write balanced chemical equations for the following reaction

Reduction of lead (II) oxide by carbon

Watch Video Solution

132. Write balanced chemical equations for the following reaction

Iron and dilute sulphuric acid

Watch Video Solution

133. Write balanced chemical equations for the following reaction

Zinc is boiled with caustic potash solution

Watch Video Solution

134. Write balanced chemical equations for the following reaction

Dry chlorine is passed over heated iron

Watch Video Solution

135. Write balanced chemical equations for the following reaction

Burning of Aluminium in air

Watch Video Solution

136. Write balanced chemical equations for the following reaction

Zinc carbonate is calcined

Watch Video Solution

137. Write balanced chemical equations for the following reaction

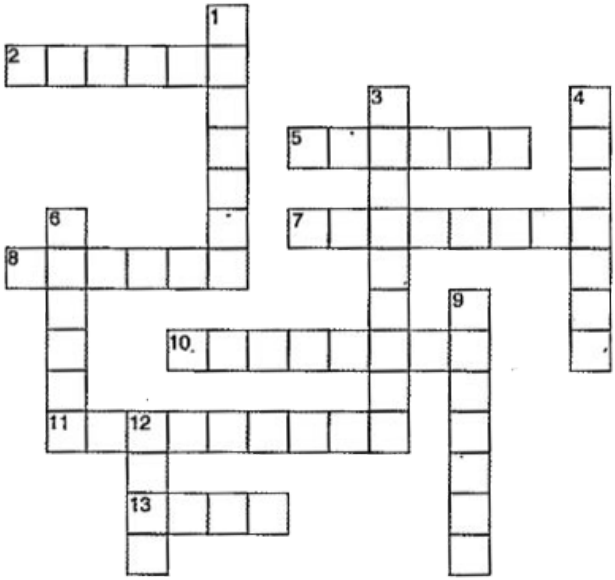
Cinnabar is heated in the air.

Watch Video Solution

138. An ore on treatment with dilute hydrochloric acid gives a smell like that of rotten eggs: What type of ore is this? How can it be concentrated? How can the metal be obtained from the concentrated ore?

Watch Video Solution

139. Solve the following crossword with the help of the given clues.



Clues :

ACROSS

2. A reddish metal which has no reaction with dil. acids and is mixed within tin to make bronze used in making cooking utensils.

5. An alloy of copper and tin.

7. A soft, silver white noble metal that does

not corrode in air. Used in making jewellery, electrical contacts, and dental crowns.

8. A solid non-metal having lustre. It has a shining surface like that of metals.

10. A form of carbon which is a good conductor of electricity

11. A metal which catches fire easily and burns with a dazzling white light to form oxide.

13. A very, soft bluish white poisonous metal which is a poor conductor of electricity used extensively in car batteries.

DOWN

1. A non-metal which is liquid at room

temperature.

3. A soft, silvery white highly reactive metal. Very violent with cold water. It is an alkali metal and is essential for the growth of plants.

4. A form of carbon which is the hardest naturally occurring substance and is used for cutting glass.

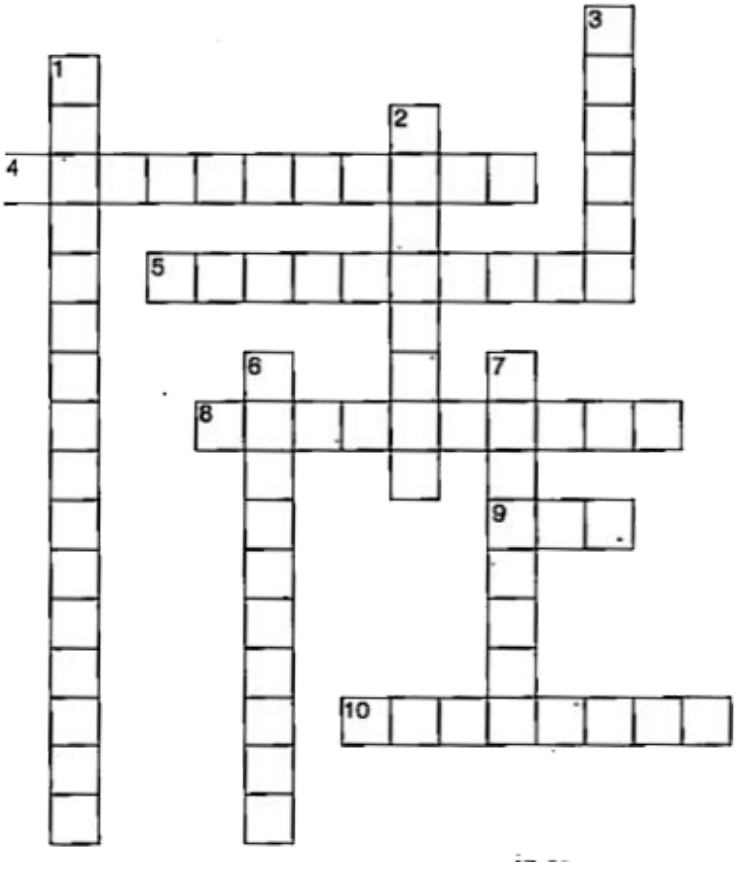
6. A highly reactive metal which is always stored in kerosene.

9. A metal which is liquid at room temperature.

12. A noble metal-lowest in reactivity series, used in making jewellery

View Text Solution

140. Solve the following crossword with the help of the given clues:



Clues :

ACROSS

4. Heating of a metal to a high temperature in the absence of air.

5. Elements that are neither good conductors of heat and electricity nor malleable. They are electronegative since they can accept one or more electrons and then form negative ions (anions).

8. Elements that show properties of both metals and non-metals.

9. The mineral from which the metal can be extracted conveniently and economically.

10. Heating the ore strongly in the presence of

excess of air.

DOWN

1. The arrangement of metals in a vertical column in order of their decreasing reactivity downwards.

2. A large group of elements, most of which are solids at room temperature, conduct heat and electricity well, have high melting and boiling points and are malleable, ductile and sonorous. They can form positive ions by the loss of electrons.

3. The elementary state or compounds in the form of which the metals occur in nature

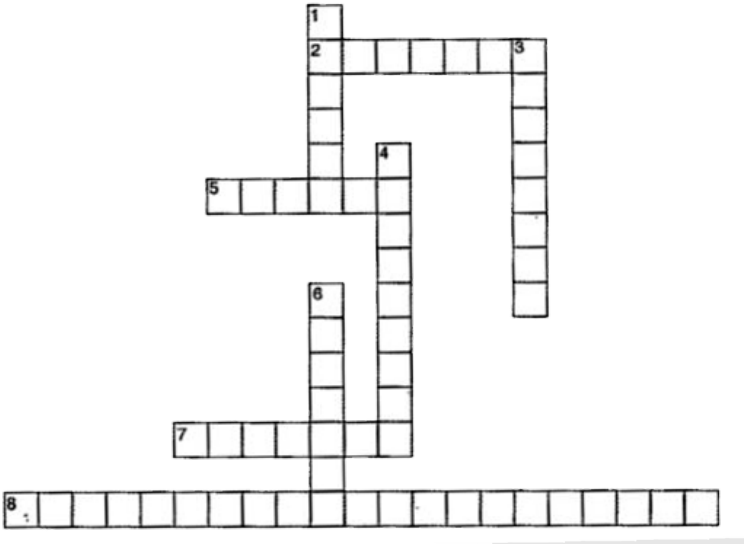
contaminated with earthy, sandy and rocky impurities.

6. The science and technology of extracting metals from their ores.

7. Metals are said to be - since they produce sound when they are struck with a hard object.

View Text Solution

141. Solve the following crossword with the help of the given clues:



Clues :

ACROSS

2. Pure aluminium oxide (Al_2O_3) obtained from the aluminium oxide present in the ore of aluminium.

5. Ore of lead (A grey, metallic mineral consisting of lead and sulphur).

7. Most common ore of Aluminium.

8. The reaction of metals in which a more reactive metal displaces a less reactive metal from the solution of its salt.

DOWN

1. The earthy, sandy and rocky impurities associated with the mineral.

3. An alloy of mercury and another metal, especially silver, commonly used in dental fillings.

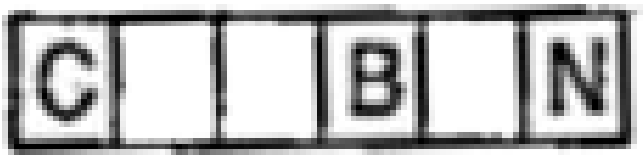
4. Can be beaten into thin sheets without breaking.

6. Can be drawn into wires without breaking.

View Text Solution

Question Bank 15 Fill In The Boxes With Letters To Give The Correct Answer With The Help Of The Given Clues

1. The element which serves both as the anode and the cathode in the extraction of aluminium.

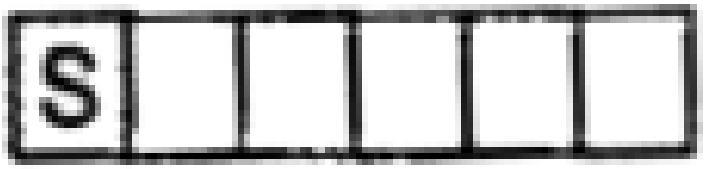


Watch Video Solution

2. The most common gas in the atmosphere

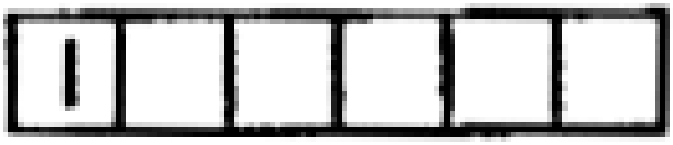
Watch Video Solution

3. The metal which floats on water.



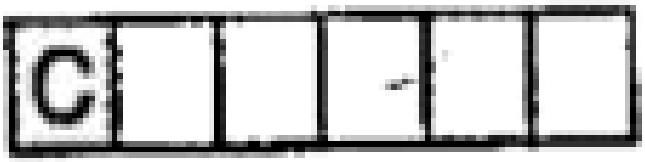
Watch Video Solution

4. The non-metal that has a metallic lustre and sublimes on heating.



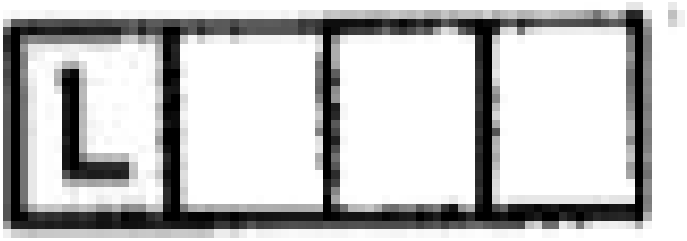
Watch Video Solution

5. A reddish brown metal which does not react with any physical state of water.



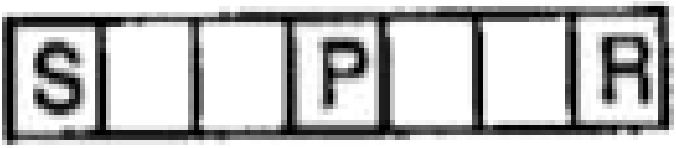
Watch Video Solution

6. This metal is used in car batteries



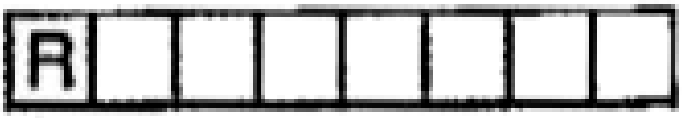
Watch Video Solution

7. A non-metal that is yellow in colour



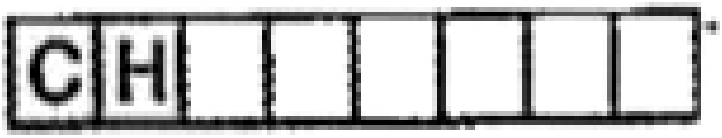
Watch Video Solution

8. The process of heating an ore to a high temperature in the presence of excess air.



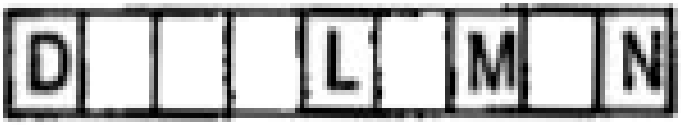
Watch Video Solution

9. A greenish-yellow gas



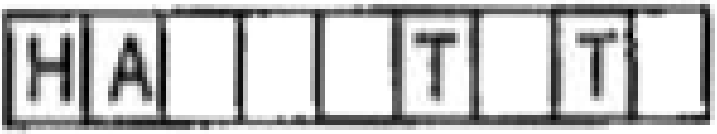
Watch Video Solution

10. This is an important allloy of aluminium



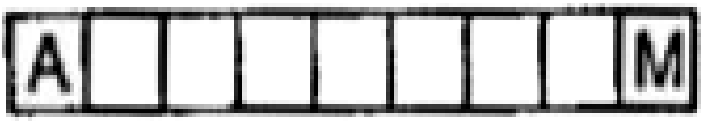
Watch Video Solution

11. This is chief ore of iron



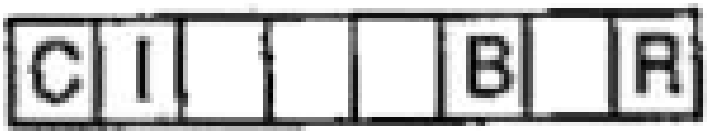
Watch Video Solution

12. This metal does not react with cold as well as hot water but reacts with steam.



Watch Video Solution

13. Sulphide ore of Mercury

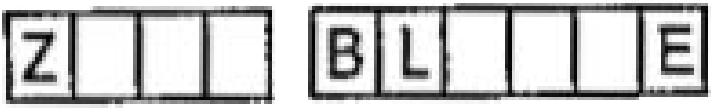


Watch Video Solution

14. The process of heating of ore in the absence of air.

Watch Video Solution

15. The most common ore of zinc



Watch Video Solution

Question Bank 16

1. A metal 'M' has the electronic configuration 2, 8, 3 - and occurs in nature as $M_2O_32H_2O$. It is more reactive than Zinc. Answer the following question:

Name the ore from which this metal is extracted

Watch Video Solution

Question Bank 17

1. A metal 'M' has the electronic configuration 2, 8, 3 - and occurs in nature as $M_2O_32H_2O$. It is more reactive than Zinc. Answer the following question:

How is the metal oxide converted to metal?

Watch Video Solution

Question Bank 18

1. A metal 'M' has the electronic configuration 2, 8, 3 - and occurs in nature as $M_2O_32H_2O$. It is more reactive than Zinc. Answer the following question:

Write a chemical equation illustrating the use of this metal for joining cracked railway lines.

Watch Video Solution

Self Assessment Sheet

1. _____ is a liquid at room temperature. (Phosphorous/Bromine)

Watch Video Solution

2. _____ is a non-metal. (Silicon / Lead)

Watch Video Solution

3. _____ reaction causes more reactive metal to replace lesser reactive metal from the latters compound (Decomposition/Displacement)

Watch Video Solution

4. Metals which give out a musical note when struck are called _____ . (ductile/sonorous)

Watch Video Solution

5. Most metals combine with oxygen to form metal oxides which are _____ . (basic/acidic)

Watch Video Solution

6. Which of the following can be beaten into thin sheets?

A. Zinc

B. Phosphorous

C. Sulphur

D. Oxygen

Answer: A

 Watch Video Solution

7. Arrange the metals from more reactive to less reactive among zinc, iron, and copper.

 Watch Video Solution

8. Is there a difference in the way a metals and non-metals react with acids. What could the 'pop' sound in some cases be due to when burning match stick is brought near the mouth of the test tube.

Watch Video Solution

9. Can lemon pickle be stored in an aluminium utensil? Explain.

Watch Video Solution

10. What are metalloids? Name two metalloids.

Watch Video Solution

11. Element A is hard, mallcable, ductile and react with dilute acids to produce salt and hydrogen is a good conductor of heat and electricity. Element B is soft, brittle and cannot be beaten to form thin sheets is a non-conductor of heat and does not react with

dilute acids. Which of these elements is a metal?

Watch Video Solution

12. Classify the following into metals, non-metals, metalloids and alloys.

Magnesium, Carbon, Nitrogen, Calcium, Bronze, Chlorine, Tin, Arsenic, Brass, Uranium.

Watch Video Solution

13. This is not a non-metal.

A. hydrogen

B. silicon

C. mercury

D. chlorine

Answer: C

Watch Video Solution

14. Depositing a layer of zinc over iron is called

A. electroplating

B. alloying

C. tinning

D. galvanization

Answer: D

Watch Video Solution

15. This is an alloy of iron, chromium and nickel.

A. stainless steel

B. steel

C. bronze

D. duralumin

Answer: A

Watch Video Solution

16. This is not the characteristic of iron.

A. sonority

B. ductility

C. good conductor of heat and electricity

D. does not rust when exposed to moist air

Answer: D

Watch Video Solution

17. Differentiate between metals and non-metals with respect to their chemical properties.

Watch Video Solution

18. Complete the following table to compare the physi- cal properties of metals and non-metals with respect to the property

mentioned in the first column.

Property	*Metals*	*Non-Metals*
1. Melting point/ boiling point		
2. State		
3. Density		
4. Thermal and electrical conductivity		
5. Malleability/Ductility		
6. Tensile strength		
7. Hardness		
8. Colour		
9. Lustre		
10. Sonority		

Watch Video Solution

19. Name the following:

Non-metal used for making fertilizers and in food packaging.

Watch Video Solution

20. Name the following:

Non-metal used to make an antiseptic solution called tincture.

Watch Video Solution

21. Name the following:

Metal used to galvanise iron to protect it from rusting.

Watch Video Solution

22. Name the following:

Two non-metals used in fireworks (crackers etc.)

Watch Video Solution

23. Name the following:

The metal which is present in our body in red blood corpuscles and whose deficiency in the body causes anaemia.

Watch Video Solution

24. Give reasons for the following:

Silver is used in making mirrors.

Watch Video Solution

25. Give reasons for the following:

Aluminium is used to make electrical wire.

Watch Video Solution

26. Give reasons for the following:

Iron is used in construction of bridges and houses.

Watch Video Solution

27. Give reasons for the following:

Graphite is used as an electrode in the dry cell.

Watch Video Solution

28. Give reasons for the following:

Iron sheets are galvanized before use.

Watch Video Solution

29. What happens when Hydrochloric acid is poured on aluminium foils? Write word equations of the reactions involved.

Watch Video Solution

30. What happens when Sodium is placed in water? Write word equations of the reactions involved.

Watch Video Solution

31. What happens when Sulphur dioxide is dissolved in water? Write word equations of the reactions involved.

Watch Video Solution

32. What happens when Iron nails are placed in copper sulphate solution. Write word equations of the reactions involved.

Watch Video Solution

33. A copper spoon had fallen into a container containing dil. HCl. What would happen to it in three days time?

Watch Video Solution

34. Which of the following statements is correct?

A. All metals are ductile

B. All non-metals are ductile

C. Generally, metals are ductile

D. Some metals are ductile

Answer:

Watch Video Solution

35. What are noble metals, which are the better known noble metals?

Watch Video Solution

36. Give an activity to show that metals burn in air to form bases.

Watch Video Solution

37. Prateek took a piece of burning charcoal and collected the gas evolved in a test tube.

(a) How will he find the nature of the gas?

(b) Write down word equations of all the reactions taking place in this process?

Watch Video Solution

38. Three test tubes marked A, B and C are taken. In test tube A copper sulphate solution and iron are added. In test tube B, copper

sulphate solution and zinc are added. In test tube C, iron sulphate solution and copper are added. In which test tube will the experimenter observe change and why?

Watch Video Solution

39. Mark 'T' if the statement is true and 'F' if it is false.

Generally, non-metals react with acids.

Watch Video Solution

40. Mark 'T' if the statement is true and 'F' if it is false.

Sodium is a very reactive metal.

Watch Video Solution

41. Mark 'T' if the statement is true and 'F' if it is false.

Copper displaces zinc from zinc sulphate solution.

Watch Video Solution

42. Mark 'T' if the statement is true and 'F' if it is false.

Coal can be drawn into wires

Watch Video Solution

43. Which one of the following is a metal?

A. graphite

B. iodine

C. phosphorus

D. magnesium

Answer: D

Watch Video Solution

44. Metal used in electroplating is

A. zinc

B. nickel

C. tin

D. aluminium

Answer: B

Watch Video Solution

45. Which of the following metals form an amalgam with other metals ?

A. lead

B. tin

C. zinc

D. mercury

Answer: D

Watch Video Solution

46. Consider the following statements about aluminium:

(1) It is the third most abundant element in the earth's crust

(2) It is used to make overhead electric transmission lines

(3) Aluminium vessels cannot be used for

making alkali solutions. Of these statements, the correct ones are

A. 1 and 2

B. 2 and 3

C. 1 and 3

D. 1, 2 and 3

Answer: D

47. An alloy used in making heating elements for electric heating devices is

A. solder

B. alloy steel

C. nichrome

D. German silver

Answer: C

Watch Video Solution

48. The non-metal present in steel is

A. hydrogen

B. iodine

C. carbon

D. argon

Answer: C

 Watch Video Solution

49. When iron filings are heated in a stream of dry hydrogen chloride, the compound formed is $FeCl_x$, where x is :

A. 1

B. 2

C. 3

D. 4

Answer: B

Watch Video Solution