

LAB ASSISTANT MODAL QUESTIONS WITH KEYS

SEED'S & ARCHANA COACHING CENTRE FOR PG TRB /TET English /Social / EVS &Tamil
DHARMAPURI.

11. Chemical Reactions short notes 10th std only

1. The lustrous white colour of the silver anklet slowly changes into slightly black colour. This is called tarnishing of silver. This is due to the formation of

- a) Silver sulphide (Ag_2S)
- b) Silver oxide (Ag_2O)
- c) Silver carbonate
- d) Silver nitrate

2. Tarnishing of silver is due to the reaction between silver and

- a) oxygen
- c) calcium oxide CaO
- b) sodium hydroxide
- d) nitrogen

3. Quick lime is

- a) calcium hydroxide
- b) hydrogen sulphide
- c) carbon dioxide
- d) sodium carbonate

4. Slaked lime is

- a) calcium hydroxide $\text{Ca}(\text{OH})_2$
- b) sodium hydroxide
- c) calcium oxide
- d) sodium carbonate

5. When dilute hydrochloric acid is added to calcium carbonate, brisk effervescence is produced.

This is due to the evolution of ----- gas

- a) CO_2
- b) O_2
- c) H_2
- d) Cl_2

6. Which of the following is used for white washing?

- a) sodium hydroxide
- b) calcium hydroxide
- c) sodium chloride
- d) washing soda

7. Chemical formula for marble is

- a) CaCO_3
- b) CaO
- c) Na_2CO_3
- d) $\text{Ca}(\text{OH})_2$

8. When copper carbonate is heated, colour is changed from

- a) blue to white
- b) green to black
- c) green to red
- d) blue to black

9. Which is less reactive? a) Fe b) Zn c) Pb d) Cu

10. Which of the following reaction does not occur?

- a) $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$
- b) $\text{Pb} + \text{CuCl}_2 \rightarrow \text{PbCl}_2 + \text{Cu}$

- c) $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$

- d) $\text{Cu} + \text{ZnSO}_4 \rightarrow \text{CuSO}_4 + \text{Zn}$

11. The catalyst used in the decomposition of potassium chlorate is -----

- a) manganese dioxide
- b) magnesium oxide
- c) Nitrogen dioxide
- d) none of these

12. $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$. This is an example for ----- reaction

- a) combination
- b) decomposition
- c) displacement
- e) elimination

13. Our body metabolism is carried out by means of ----- secreted in our stomach.

- a) hydrochloric acid
- b) sulphuric acid
- c) nitric acid
- d) formic acid

14. Substances with „sour taste“ are

- a) acids
- b) bases
- c) salts
- d) none of these

15. Washing soda is

- a) Na_2CO_3

- b) NaHCO_3
- c) CaO
- d) CaCO_3

16. The gas which turns lime water milky is

- a) H_2S
- b) O_2
- c) SO_2
- d) CO_2

17. Baking soda is

- b) NaHCO_3
- a) Na_2CO_3

- c) CaO
- d) CaCO_3

19. Metal carbonates, metal bicarbonates and metal oxides are

- a) acidic
- b) basic
- c) neutral
- d) Tartaric acid

20. King of chemicals is

b) Nitric acid a) Sulphuric acid c) Hydrochloric acid d) none of these

21. Which is used as a cleansing agent in toilet?

a) Sulphuric acid b) Nitric acid c) Hydrochloric acid d) Tartaric acid

21. Our body metabolism is carried out by means of ----- secreted in our stomach.

a) hydrochloric acid b) sulphuric acid c) nitric acid d) formic acid

22. Substances with „sour taste“ are

a) acids b) bases c) salts d) none of these

23. Which of the following is weak acid?

a) b) c) d)

HCl HNO₃ H₂SO₄ CH₃COOH

24. Formic acid (HCOOH) is .

a) mineral acid b) strong acid c) weak acid d) dibasic acid

25. Acetic acid (CH₃COOH) is

a) mineral acid b) tetrabasic acid c) monobasic acid d) dibasic acid

26. The acid present in grape is

a) acetic acid b) malic acid c) tartaric acid d) lactic acid

27. ----- gas burns with a „pop“ing sound

a) Hydrogen b) Oxygen c) Nitrogen d) Chlorine

28. Tribasic acid is

a) H₂SO₄ b) CH₃COOH c) H₃PO₄ d) H₃PO₃

29. Which of the following does not liberate hydrogen gas on reaction with acids?

a) b) c) d) all the

Zn Mg Ag above

30. Lime stone, chalk and marble are different physical forms of

a) calcium carbonate b) sodium carbonate c) potassium carbonate d) none of these

31. The atmosphere of Venus is made up of thick white and yellowish clouds of -----

a) Sulphuric acid b) Nitric acid c) Hydrochloric acid d) Tartaric acid

32. Caustic soda is

a) NaOH b) KOH c) Ca(OH)₂ d) H₂SO₄

33. Caustic potash is

a) NaOH b) KOH c) Ca(OH)₂ d) H₂SO₄

34. Which of the following is a weak base?

a) NaOH b) KOH c) NH₄OH d) All of these

35. Which of the following does not react with NaOH?

a) Al b) Zn c) Cu d) All of these

36. Which is used as a medicine for stomach troubles?

a) NaOH b) Ca(OH)₂ c) Al(OH)₃ d) Mg(OH)₂

37. pH scale was introduced by

a) S.P.L.

J.J. Thomson c) Kelvin

b) Sorenson d) Rutherford

38. pH of an acidic solution is

a) < 7 b) > 7 c) = 7 d) = 14

39. pH of a solution is.

a) 10 b) 7 c) 0 d) 4

40. pH + pOH = What is the pOH?

a) 14 b) 7 c) 0 d) 5

41. pH of lemon juice is

a) 4.1 b) 2.2 – 2.4 c) 6.5 – 7.5 d) 4.4 – 5.5

42. Human body becomes prone to viral infections like colds, cough and flu at a pH of

- a) 14 b) 0 c) 9.6 d) 6.9

43. Cancer cells thrive inside the body at a pH of

- a) 14 b) 0 c) 9.6 d) 5.5

44. The pH of a normal, healthy human skin is

- a) 4.5 to 6 b) 6.6 to 7.7 c) 2-4 d) 7

45. pH of stomach fluid is approximately

- a) 0 b) 7 c) 2 d) 10

46. Human blood pH range is

- a) 7.35 to 7.45

- b) 4.35 to 4.45 c) 8.35 to 8.45 d) 2.35 to 2.45

47. The ideal pH for blood is

- a) 7.4 b) 2.4 c) 7 d) 14

47. pH of normal saliva ranges between

- a) 4.5 to 5.5 b) 5.5 to 5.5 c) 7.5 to 8.5 d) 6.5 to 7.5 .

49. White enamel coating in our teeth is

- a) calcium phosphate b) calcium chloride c) calcium carbonate d) calcium oxide

50. pH of rain water is approximately

- a) 0 b) 14 c) 7 d) 5

51. Rain water is

- a) acidic b) basic c) neutral d) alkaline

52. If rain water is polluted by ----- acid rain occurs

- a) SO₂ and NO₂ b) CO₂ and CO c) CaO and Na₂O d) none of these

53. Which is normal salt?

- a) NaCl b) NaHSO₄ c) Pb(OH)Cl d) Potash alum

54. Which of the following is used in softening hard water?

- a) NaHCO₃ b) Na₂CO₃ c) CaCO₃ d) K₂CO₃

ARCHANA - DHARMAPURI

11. Chemical Reactions short notes 10th std only

1. Physical changes can be easily reversed
2. Chemical changes are more permanent than physical changes.
3. All chemical changes are accompanied by chemical reactions.
4. Silver anklet has got tarnished, due to the formation of silver sulphide (Ag_2S), as a result of the reaction between silver and hydrogen sulphide in the air.
5. Calcium oxide reacts with water to produce slaked lime (calcium hydroxide).
6. Formation of slaked lime is an exothermic, accompanied by hissing sound and bubbles.
7. The brisk effervescence is due to the evolution of carbon dioxide gas.
8. The substances taking part in the reaction are known as reactants and those formed as a result of the reaction are called products.
9. The chemical formula for marble is also CaCO_3 .
10. Chemical reactions are classified into six categories - combination reaction, decomposition reaction, displacement reaction, double decomposition reaction / double displacement reaction, Oxidation and reduction
11. A combines with B to form a new product AB. (combination reaction).
12. Magnesium combines with oxygen to form a single product, magnesium oxide. Such a reaction in which a single product formed from two or more reactants is known as combination reaction. $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$.
13. Combustion of coal and Combustion of hydrogen are examples of combination reaction.
14. AB splits into A and B (decomposition reaction). E.g., Decomposition of lime stone, decomposition of ammonium dichromate, chemical volcano.
15. In the reaction between A and BC, A displaces B from BC to form AC (displacement reaction).
16. Lead can displace copper from its salt solutions.
17. Copper can't displace zinc or lead from their salt solutions, because copper is less reactive than zinc and lead.
18. The reaction in which, a more reactive element displaces a less reactive element from its compound is called displacement reaction.
19. Double decomposition reaction / double displacement reaction - In the reaction between AB and CD, both the reactants decompose to form AD and CB through the rearrangement of ions.
20. Double decomposition reaction is any reaction in which exchange of ions between two reactants occurs, leading to the formation of two different products.
21. Oxidation and reduction Fading of the colours of the clothes, burning of substances like cooking gas, wood and coal, and also rusting of iron articles – due to oxidation \square reduction reaction (redox reaction).
22. A large number of industrial processes like electroplating, extraction of metals like aluminium, are based upon the redox reaction.
23. Oxidation is a chemical reaction which involves addition of oxygen or removal of hydrogen or loss of electron(s).
24. Reduction is a chemical reaction which involves addition of hydrogen or removal of oxygen or gain of electron(s).
25. Redox reaction is a chemical reaction in which oxidation and reduction take place simultaneously.

26. Loss of electron is oxidation (LEO). Gain of electron is reduction (GER).
27. Oxidation is Gain of oxygen / Loss of hydrogen / Loss of electron(s).
28. Reduction is Loss of oxygen / Gain of hydrogen / Gain of electron(s).
29. One of the most common changes during chemical reactions is a change in temperature.
30. Oxidation also has damaging effects on food and eatables.
31. The chemical reactions which proceed with the evolution of heat energy are called exothermic reactions. Eg., $N_2 + 3H_2 \rightarrow 2NH_3 + \text{Heat}$
32. All combustion reactions are exothermic.
33. The chemical reactions which proceed with the absorption of heat energy are called endothermic reactions. Eg., $2NH_3 + \text{Heat} \rightarrow N_2 + 3H_2$
34. Rate of the chemical reaction is defined as change in concentration of any one of the reactants or products per unit time.
35. Rate of the reaction is given by $d[A] / d[B]$
36. The greater the surface area, greater is the rate of the reaction.
37. Acid is a substance which furnishes H^+ ions or H_3O^+ ions when dissolved in water.
38. Acids have one or more replaceable hydrogen atoms.
39. The word acid is derived from the Latin name acidus which means sour taste.
40. Substances with sour taste are acids.
41. Lemon juice, vinegar and grape juice have sour taste, so they are acidic.
42. Acids change blue litmus to red.
43. A substance which alters the rate of the reaction without undergoing any change in mass and composition is known as catalyst.
44. Acids are colorless with phenolphthalein and pink with methyl orange.
45. Many organic acids are naturally present in food items.
46. Based on the source, acids are classified into organic acids and inorganic acids.
47. Organic acids are present in plants and animals (living beings) eg. $HCOOH$, CH_3COOH (Weak acids).
48. Inorganic (mineral) acids are found in rocks and minerals. eg., HCl , HNO_3 , H_2SO_4 (Strong acids).
49. Based on their basicity acids are classified into monobasic, dibasic and tribasic acids.
50. Monobasic acid is an acid which gives one hydrogen ion per molecule of the acid in solution e.g., HCl , HNO_3 .
51. Dibasic acid is an acid which gives two hydrogen ions per molecule of the acid in solution e.g., H_2SO_4 , H_2CO_3 .
52. Tribasic acid is an acid which gives three hydrogen ions per molecule of the acid in solution. e.g., H_3PO_4 ,
53. Based on ionization, acids are classified into two types - strong acids and weak acids.
54. Strong acids ionize completely in water e.g., HCl .
55. Weak acids ionize partially in water e.g., CH_3COOH .
56. Based on concentration, acids are classified into concentrated acid and dilute acid.
57. Concentrated acid has high percentage of acid in its aqueous solution.
58. Dilute acid has low percentage of acid in aqueous solution.
59. Acids turn blue litmus paper red.
60. Apple contains malic acid.
61. Lemon contains Citric acid.
62. Grapes contain Tartaric acid.

63. Tomato contains Oxalic acid.
64. Vinegar (food preservative) contains Acetic acid.
65. Curd contains Lactic acid.
66. Basicity is the number of replaceable hydrogen atoms present in one molecule of an acid.
67. All metals do not liberate hydrogen gas on reaction with acids. e.g., Ag, Cu.
68. Lime stone, chalk and marble are different physical forms of calcium carbonate.
69. Sulphuric acid (King of chemicals) is used in car battery and in the preparation of many other compounds.
70. Nitric acid is used in the production of ammonium nitrate which is used as fertilizer in agriculture.
71. Hydrochloric acid is used as cleansing agent in toilet.
72. Tartaric acid is a constituent of baking powder.
73. Salt of benzoic acid (sodium benzoate) is used in food preservation.
74. Carbonic acid is used in aerated drinks.
75. An acid produces hydrogen ions in water.
76. Hydrogen ions exist in the form of hydronium (H_3O^+) ions with water.
77. The atmosphere of Venus is made up of thick white and yellowish clouds of sulphuric acid.
78. The term acidity means the number replaceable hydroxyl groups present in one molecule of a base.
79. Base is a substance which releases hydroxide ions when dissolved in water.
80. Base is bitter in taste and soapy to touch (e.g. Washing soda, caustic soda and caustic potash).
81. Bases change red litmus to blue. They are pink with phenolphthalein and yellow with methyl orange.
82. Based on ionization, bases are classified into strong bases and weak bases. Strong bases ionize completely in aqueous solution e.g. NaOH, KOH.
83. Weak bases ionize partially in aqueous solution e.g. NH_4OH , $\text{Ca}(\text{OH})_2$.
84. Based on their acidity, bases are classified into monoacidic, diacidic and triacidic bases.
85. Monoacidic base is a base which ionizes in water to give one hydroxide ion per molecule e.g. NaOH, KOH.
86. Diacidic base is a base which ionizes in water to give two hydroxide ions per molecule e.g. $\text{Ca}(\text{OH})_2$, $\text{Mg}(\text{OH})_2$.
87. Triacidic base is a base which ionises in water to give three hydroxide ions per molecule e.g. $\text{Al}(\text{OH})_3$, $\text{Fe}(\text{OH})_3$.
88. Based on the concentration, bases are classified into concentrated and dilute alkali.
89. Concentrated alkali is an alkali having a relatively high percentage of alkali in its aqueous solution.
90. Dilute alkali is an alkali having a relatively low percentage of alkali in its aqueous solution.
91. Bases generate hydroxide (OH^-) ions when dissolved in water.
92. Bases which dissolve in water are called alkalies. All alkalies are bases, but not all bases are alkalies.
93. NaOH and KOH are alkalies.
94. Sodium hydroxide is used in the manufacture of soap.

95. Calcium hydroxide is used in white washing the buildings.
96. Magnesium hydroxide is used as a medicine for stomach troubles.
97. Ammonium hydroxide is used to remove grease stains from clothes.
98. pH stands for the power of hydrogen ion concentration in a solution.
99. pH values decide whether a solution is acidic or basic or neutral.
100. pH scale was introduced by S.P.L. Sorenson. It is mathematically expressed as $\text{pH} = -\log_{10} [\text{H}^+]$
101. For neutral solution $[\text{H}^+] = 10^{-7}\text{M}$; $\text{pH} = 7$
102. For acidic solution $[\text{H}^+] > 10^{-7}\text{M}$; $\text{pH} < 7$
103. For basic solution $[\text{H}^+] < 10^{-7}\text{M}$; $\text{pH} > 7$
104. pH of Lemon juice is $2.2 \text{ to } 2.4$
105. pH of Tomato juice 4.1
106. pH of Coffee $4.4 - 5.5$
107. pH of Human saliva $6.5 - 7.5$
108. pH of House hold ammonia 12.0
109. At pH level 6.9, the body becomes prone to viral infections like colds, cough and flu.
110. Cancer cells thrive inside the body at a pH of 5.5.
111. The pH of a normal, healthy human skin is 4.5 to 6.
112. pH of stomach fluid is approximately 2.0.
113. Human blood pH range is 7.35 to 7.45.
114. The ideal pH for blood is 7.4.
115. pH of normal saliva ranges between 6.5 to 7.5.
116. White enamel coating in our teeth is calcium phosphate, hardest substance in our body.
117. If pH of mouth falls below 5.5, the enamel gets corroded.
118. Toothpastes are generally basic.
119. Citrus fruits require slightly alkaline soil, while rice requires acidic soil and sugar cane requires neutral soil.
120. pH of rain water is approximately 7 showing high level of its purity and neutrality.
121. If rain water is polluted by SO_2 and NO_2 , acid rain occurs.
122. Salts are the products of the reaction between acids and bases.
123. A normal salt is obtained by complete neutralization of an acid by a base. e.g., $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$
124. Acid salts are derived by the partial replacement of hydrogen ions of an acid by a metal.
125. Basic salts are formed by the partial replacement of hydroxide ions of a diacidic or triacidic base by an acid radical.
126. A basic salt may react with an acid to give a normal salt.
127. Double salts are formed by the combination of saturated solution of two simple salts in equimolar ratio followed by crystallization. e.g., potash alum.
128. Common salt (NaCl) It is used in our daily food and as preservative.
129. Washing soda (Na_2CO_3) is used in softening hard water, as a cleaning agent.
130. Baking soda (NaHCO_3) is used in making baking powder.
131. Baking powder is the mixture of baking soda and tartaric acid.
132. Baking powder is used to make cake and bread soft and spongy .
133. Baking soda is an ingredient in antacid.
134. Bleaching powder (CaOCl_2) is used for disinfecting drinking water to make it free from microorganisms.

135. Bleaching powder is used for bleaching cotton and linen in the textile industry.
136. Plaster of paris ($\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$) is used for plastering fractured bones and in making casts for statues.

PRACTICE

1. $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2 \uparrow$
The above reaction is an example of
a) Combination reaction
b) Double displacement reaction
c) Displacement reaction
d) Decomposition reaction.
2. A reddish brown coloured element 'X' on heating in air becomes black coloured compound 'Y'. X and Y are _____ and _____ (Cu, CuO / Pb, PbO).
3. A student tested the pH of pure water using a pH paper. It showed green colour. If a pH paper is used after adding lemon juice into water, what color will he observe? (Green / Red / Yellow)
4. Chemical volcano is an example of (combination reaction / decomposition reaction)
5. When crystals of lead nitrate on heating strongly produces a _____ gas and the colour of the gas is _____.
6. When aqueous solution of silver nitrate and sodium chloride are mixed _____ precipitate is immediately formed (white / yellow / red).
7. Zinc can displace aluminium metal from aqueous solution of aluminium sulphate (zinc is more reactive than aluminium / aluminium is more reactive than zinc).
8. To protect tooth decay, we are advised to brush our teeth regularly. The nature of the tooth paste commonly used is _____ in nature.
9. Vinegar is present in acetic acid. Curd contains _____ acid (Lactic acid / Tartaric acid).
10. $\text{pH} = -\log_{10} [\text{H}^+]$. The pH of a solution containing hydrogen ion concentration of 0.001M solution is _____ (3 / 11 / 14)
11. On heating the green colour copper carbonate changes into _____ colour resulting in the formation of copper oxide?
12. $\text{pH} + \text{pOH} = 14$. If the value of pOH of a substance is 3, its pH is _____
13. Any metal mixed with mercury is called _____
14. The percentage of purity of Gold is calculated for making ornaments.
15. $2 \text{KClO}_3 \rightarrow 2 \text{KCl} + 3 \text{O}_2$. In this chemical reaction MnO_2 acts as _____
16. At very high temperature Ammonium dichromate decomposes to give _____
17. Our body metabolism is carried out by means of _____ acid secreted in our stomach
18. The ideal pH for Blood is _____
19. _____ is a Double salt.
20. The gas which can turn Lime water milky is _____
21. The gas which will burn with a „pop“ing sound is _____
22. King of Chemicals is _____

Answer keys

11. Black 12.11 13. Amalgam 14.22 / 24 x 100 15. Catalyst 16. Nitrogen 17. HCl 18.7.4 19.
Potash Alum 20. CO₂ 21. Hydrogen 22. Sulphuric acid

23. $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$ In this chemical reaction MnO₂ acts as
(Reactant, product, catalyst, promoter)

24. On heating the green colour copper carbonate changes intocolour resulting in
the

formation of copper oxide? (White, black, green, red)

35. The nature of the tooth paste commonly used is in nature
(acidic, basic, neutral, Salty)

36. $\text{pH} + \text{pOH} = 14$ If the value of pOH of a substance is 3, its pH is (3, 11, 14, 1)

37. $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2 \uparrow$ The above reaction is an example of reaction
(Combination, Double displacement, Displacement, Decomposition)

ALL THE BEST

you must refer books dont believe this plz just guide only