

ASSIGNMENT QUESTIONS SET - 1

CHAPTER - 2

ACIDS, BASES AND SALTS

VERY SHORT ANSWER TYPE QUESTIONS

1. Name two natural indicators.
2. Name two indicators that are usually used in chemical laboratories to indicate acidic/basic nature of a solution.
3. What is the general name of bases that are soluble in water?
4. What is an acid?
5. Define base
6. What is the action of an acid on blue litmus paper?
7. Name two natural substances that contain acid.
8. What is the oxide of a metal called?
9. Are all bases alkalis?
10. Which type of substance is used to indicate an acid or a base?
11. What is the common element present in all acids?
12. Give the name and formula of two mineral acids.
13. Common salt contains a substance which is hygroscopic. Name the substance and write its formula.
14. Name any two organic acids.
15. What is the common to all bases?
16. Name two sources of common salt.
17. How do metals react with acid?
18. Name two metals that react with a base to produce hydrogen gas.
19. Which gas is evolved when sodium carbonate reacts with hydrochloric acid?
20. What happens when carbon dioxide gas is passed into lime water?
21. Name a sodium compound which loses its water of crystallization on exposure to air.
22. A compound of metal is obtained mainly from sea water. Write the name and formula of the compound.
23. What is the common name and formula of sodium hydroxide?
24. What is the reaction called in which an acid and a base nullify the effect of each other?

25. Name the salt which was an important symbol in India's struggle for freedom?
26. Name a sodium compound used as a cleansing agent for domestic purposes.
27. Why does an aqueous solution of an acid conduct electricity?
28. The pH of a solution is 4. What is the nature of the solution?
29. A solution reacts with crushed egg-shells to give a gas that turns lime water milky. Say, whether the solution contains an acid or a base.
30. Which type of medicine is used to treat indigestion?
31. Which compound of a metal is a constituent of many dry soap powders?
32. Name the acid which is used as a bathroom cleaner.
33. What is the action of litmus on an aqueous solution of ammonium chloride?
34. Why is a basic substance used to treat a honey-bee sting?
35. A solution turns blue litmus red. What is its pH value?
36. Which one is more acidic, pH = 2 or pH = 5?
37. Which one of the two solutions is more basic, pH = 8 or pH = 11?
38. What is the nature of the salt which dissolves in water to produce a solution which turns blue litmus to red?
39. A milkman adds some baking soda to fresh milk. How will the pH of the fresh milk change?
40. What is the pH of a solution which is neither acidic nor basic?
41. What is the chemical formula of common salt?
42. Name the process by which sodium hydroxide is made by electrolysis of brine?
43. Give the chemical name and formula of washing soda?
44. Mention the property of sodium carbonate that makes it useful as an ingredient for dry soap powders.
45. Name the carbonate of a metal which is soluble in water.
46. What is soda ash?
47. State whether the aqueous solution of washing soda is acidic or alkaline?

48. Name the substance which on being treated with chlorine yields bleaching powder.
49. Write the chemical formula of plaster of paris.
50. Write an equation to show the reaction between plaster of paris and water.
51. Write the chemical formula of quicklime.
52. Name a compound of calcium which is used for whitewashing.
53. Which compound of calcium is used for making cement and glass?
54. Write an equation to show the reaction between quicklime and water.
55. Which compound of calcium is used to produce limelight?
56. Write the chemical name and formula of baking soda?
57. Name a compound of sodium which is used in fire extinguisher.
58. Write the chemical name and formula of bleaching powder?
59. Two solutions have pH number 4 and 9 respectively which solution has more H^+ ion concentration?
60. Which compound of calcium is used for disinfecting water?
61. Why should cured and sour substances not be kept in brass and copper vessel?
62. Name a compound of calcium which hardens on being mixed with water.
63. Write down the molecular formula for one strong and one weak acid.
64. Explain why plaster of Paris should be stored in a moisture proof container?
65. Name the gas evolved when dil. sulphuric acid acts on sodium carbonate.
66. What is the use of common salt in soap industry?
67. Which compound of calcium is used in paper and textile industries?
68. What do you observe when a burning candle is brought near the test-tube containing hydrogen gas?
69. Name the indicator used to measure pH values over the whole range.
70. A white, solid substance is used to disinfect water, and it makes wool shrink-proof. Name the substance.
71. How many water of crystallization are present in copper sulphate crystals?

72. Write the name and formula of a compound which contains ten molecules of water of crystallization?
73. Name a sodium compound which is used in softening hard water.
74. A white powdery substance smells of chlorine and is used for disinfecting drinking water.
What is the name of substance?
75. What happens when anhydrous copper sulphate is moistened with water?
76. Name the substance produced by the action of chlorine on dry slaked lime.
77. Name the compound of calcium used for bleaching cloth.
78. A compound is used to make casts for statues and for holding broken limbs and joints in place. What is this compound?
79. Write chemical equation to represent the action of dilute hydrochloric acid on bleaching powder?
80. Represent the reaction between plaster of Paris and water in the form of an equation.

SHORT ANSWER TYPE QUESTIONS

1. What is an acid? Give some examples of organic and inorganic acids.
2. What is a base? Give examples?
3. What is an indicator? Give some examples of indicators?
4. What is litmus?
5. Describe some natural acid-base indicators, other than litmus.
6. What are olfactory indicators?
7. What do you mean by concentrated and dilute acid solutions?
8. Explain why brass and copper vessels are not used to keep curd and sour substances?
9. Name the gas which is liberated when metals react with an acid. Give an example. How is the presence of the gas tested?
10. HCl, HNO₃ etc. show acidic behavior in aqueous solutions but aqueous solutions of alcohol and glucose do not behave like acids. Explain why?
11. What would be the nature of solutions when the following salts are dissolved separately in water?

- (i) NaCl
- (ii) Na₂CO₃
- (iii) CH₃COONa
- (iv) CuSO₄
- (v) (NH₄)₂SO₄
- (vi) Na₂SO₄

12. What are the functions of sodium chloride in human body?

13. Given below are the pH values of four different liquids : 7.0, 14.0, 4.0,

2.0 Which of these could be that of

- (i) Lemon juice.
- (ii) distilled water
- (iii) 1 M sodium hydroxide solution
- (iv) tomato juice

14. Why does an aqueous solutions of an acid conduct electricity?

15. During the dilution of an acid, it is advised that acid should be added to water, not water to acid. Why?

16. An acid solution is diluted with water. How does the concentration of hydrogen ions change?

17. What is the pH of a solution?

18. A metal compound when treated with dilute hydrochloric acid forms calcium chloride and a gas. The gas evolved extinguishes a burning splinter. Write the equation for the reaction that occurs.

19. Why does the colour of dry litmus paper not change in contact with dry HCl gas?

20. How is the concentration of OH⁻ ions change when excess of base is dissolved in a solution of sodium hydroxide?

21. What will happen if solid sodium hydrogen carbonate or a solution of it is heated? Give the equation of the reaction involved?

22. Give two important uses of washing soda.

23. Give two important uses of baking soda.

24. A baker found that the cake prepared by him was hard and small in size. Which ingredient had he forgotten to add that would have made the cake fluffy? Give reasons.

25. How is soda ash obtained from washing soda crystals? Support your answer by a chemical equation.
26. How does a fire extinguisher work?
27. Why is an aqueous solution sodium carbonate alkaline in nature?
28. A given compound of sodium is used to remove hardness of water and also as a reagent in the laboratory. Identify the compound and mention two of its uses.
29. How is bleaching powder prepared? Give the reaction.
30. What happens when bleaching powder is left exposed to air?
31. State three important uses of bleaching powder?
32. (i) Name the chemical used in hospitals for setting fractured bones.
(ii) State the name of the above chemical and its formula.
(iii) How is the above compound prepared?
33. What is gypsum? What happens when gypsum is heated to 393k?
34. Explain giving reasons: "Potassium hydrogen tartrate is a component of baking powder used in making cakes".
35. A white amorphous powder emits a greenish yellow gas having a smell of chlorine. It is used to remove yellowness of white clothes in laundries. Identify the powder. Write the chemical equation involved in its preparation.
36. You are provided with two solutions A and B having pH 6 and 8 respectively. Which of the solutions does contain more H^+ ion concentration? Which of them is acidic and which one basic?
37. Do basic solution also have H^+ ions. If yes, then why are they basic?
38. What do the farmers do to treat the soil when it becomes too acidic?
39. What effect does a bee-sting produce on human body? What is its remedy?
40. What is the chemical substance injected into a man's skin when (a) an ant stings him (b) a nettle-leaf stings him?
Suggest remedy to get relief from the effects of the stings.
41. How are the lives of aquatic animals affected with change in pH of the river water?
42. Explain the following: "Distilled water does not conduct electricity, but rain water does".

43. Why is an aqueous solution of sodium chloride neutral, whereas that of ammonium chloride acidic?
44. An efflorescent white, crystalline substance dissolves in water to produce an alkaline solution. The substance is used as a cleansing agent. Identify the substance and mention two uses of it.
45. A white, powdery compound of calcium is used for making toys and casts of statues. It hardens when mixed with water. Identify the compound. Write the chemical equation of its preparation.
46. What is the chemical formula of plaster of Paris? How is it prepared? State the common and the chemical names of the compound formed when plaster of Paris mixed with water?
47. State two uses of the following:
- Sodium hydroxide
 - Chlorine
 - Hydrogen
 - Hydrochloric acid
48. (a) What is the common name of the compound CaOCl_2 .
- Name the raw material used for the preparation of plaster of Paris.
 - Which property of plaster of Paris is utilized in making casts for broken limbs in hospitals?
49. What happens when a cold and concentrate solution of sodium chloride reacts with ammonia and carbon dioxide? Write the chemical equation of the reaction which takes place.
50. Write the chemical formula of ammonium chloride. Explain why an aqueous solution of ammonium chloride is acidic in nature? Illustrate your answer with the help of a chemical equation.

LONG ANSWER TYPE QUESTIONS

- What is baking soda? How is it obtained from sodium chloride? Mention any two uses of baking soda.
- What is the commercial name of bleaching powder? How is bleaching powder prepared? What are its different uses?
- What do you mean by the strength of an acid? What are strong and weak acids?

4. What do you mean by the strength of a base? What are strong and weak base?
5. Three test tubes A, B and C contain distilled water, a basic solution and an acid solution separately. How would you identify the contents of the test tubes with the help of a red litmus paper only?
6. What are the different uses of sodium carbonate (Washing soda)?
7. State the important properties of washing soda.
8. What happens when carbon dioxide gas is passed through limewater? Give equations for the reactions that take place.
9. With the help of universal indicator the pH values of solutions A, B, C, D and E were found to be 5, 2, 12, 7 and 10 respectively. Say which solution is
 - (i) neutral
 - (ii) strongly base
 - (iii) strongly acidic
 - (iv) weakly acid
 - (v) weakly basic

Arrange the pH in the increasing order of H^+ ions configuration.

10. Discuss briefly the reactions occurring when a concentrated solution of sodium chloride (brine) is electrolyzed?
11. Explain how is washing soda produced using sodium chloride as one of the raw materials?
12. (a) What is a salt? Give the names and formula of any two salts. Also name the acids and bases from which these salts may be obtained.
 - (a) What is meant by hydrated and anhydrous salts? Explain with example.
13. (a) What is plaster of paris? Write its chemical formula.
 - (a) How is plaster of paris prepared? Write the chemical equation of the reaction involved.
 - (b) Explain why plaster of paris should be stored in a moisture proof container.
 - (c) State two important uses of plaster of paris.
14. (a) What is bleaching powder? Write its chemical formula.

(a) How is bleaching powder prepared? Write the chemical equation of the reaction involved.

(b) State two important uses of bleaching powder.

15. (a) What happens when zinc granules are heated with sodium hydroxide solution? Write chemical equation of the reaction which takes place.

(b) What happens when bases react with nonmetals oxides? Explain with the help of an example. What does this reaction tell us about the nature of non-metal oxides?

ASSIGNMENT QUESTIONS SET - 2

CHAPTER - 2

ACIDS. BASES AND SALTS

1. The colour of neutral litmus solution is

(a) red (b) blue (c) purple (d) yellow

2. Which of the following indicators is an olfactory indicator?

(a) litmus (b) vanilla (c) turmeric (d) phenolphthalein

3. Which one is suitable method to find the accurate pH value?

(a) pH meter (b) pH paper (c) Universal indicator (d) Litmus solution

4. Which one of the following statements is correct about universal indicator?

(a) It is a mixture of HCl and NaOH

(b) It is a mixture of many indicators

(c) It is a solution of phenolphthalein in alcohol

(d) It is a solution of phenolphthalein in water.

5. Which of the following properties are shown by dilute HCl?

(1) It turns blue litmus red

(2) It turns red litmus blue

(3) It reacts with zinc and a gas is evolved

(4) It reacts with solid sodium carbonate to give brisk effervescence

(a) 1 and 2 (b) 1 and 3 (c) 1, 3 and 4 (d) 2, 3 and 4

6. A teacher gave two test tubes - one containing water and the other containing sodium hydroxide solution to two students. Then he asked them to identify the test tube containing sodium hydroxide solution. Which

one of the following can be used for correctly identifying the test tube containing the solution of sodium hydroxide?

(a) Blue litmus (b) Red litmus (c) Sodium carbonate solution (d) Dilute HCl

7. Metallic oxides are in nature, but non-metallic oxides are in nature.

The information in which alternative completes the given statement?

(a) Neutral, acidic (b) acidic, basic (c) basic, neutral (d) basic, acidic

8. When a drop of unknown solution X is placed on a strip of pH paper, a deep red colour is produced. This sample is which one of these?

(a) NaOH (b) HCl (c) Water (d) CH₃COOH

9. A student tests a sample drinking water and reports its pH value as 6 at room temperature. Which one of the following might have been added in water?

(a) Calcium chloride (b) Sodium chloride (c) Sodium bicarbonate (d) Bleaching powder

10. Solid sodium bicarbonate was placed on a strip of pH paper. The color of the strip (a) turned red (b) did not change (c) turned green and slightly yellow (d) turned pink

11. Four drops of red litmus solution were added to each of the following samples. Which one turns red litmus blue?

(a) Alcohol (b) Distilled water (c) Sodium hydroxide sol (d) HCl

The pH of which of the following samples can not be found directly using pH paper?

(a) Lemon juice (b) Dilute HCl (c) Solid sodium bicarbonate (d) Solution of a detergent.

12. Which of the following natural sources contains oxalic acid?

(a) lemon (b) orange (c) tomato (d) tamarind

13. The acid found in an ant sting is

(a) acetic acid (b) citric acid (c) tartaric acid (d) methanoic acid

14. To relieve pain caused due to acidity, we can take

(a) sour milk (b) lemon juice (c) orange juice (d) milk of magnesia

15. What are the products obtained when potassium sulphate reacts with barium iodide in an aqueous medium?

(a) KI and BaSO₄ (b) KI, Ba and SO₂ (c) K, I₂ and BaSO₄ (d) K, Ba, I₂ and SO₂

16. Which of the following salts is basic in nature?
(a) NH_4NO_3 (b) Na_2CO_3 (c) Na_2SO_4 (d) NaCl
17. Which of the following salts has the minimum pH value?
(a) $(\text{NH}_4)_2\text{SO}_4$ (b) NaHCO_3 (c) K_2SO_4 (d) NaCl
18. You are given four unknown solutions I, II, III, and IV. The pH values of these solutions are found to be 3, 7, 8, and 10 respectively. Among the given solutions, which solution has the highest hydrogen ion concentration?
(a) I (b) II (c) III (d) IV
19. Which one of the following is required to identify the gas evolved when dilute hydrochloric acid reacts with zinc metal?
(a) blue litmus paper (b) red litmus paper (c) a burning splinter (d) lime water
20. Zinc reacts with an acid as well as with a base to liberate hydrogen. On the basis of this what should be the nature of the zinc metal?
(a) basic (b) acidic (c) amphoteric (d) neutral
21. When you test the solutions of sodium bicarbonate, sodium hydroxide, hydrochloric acid and acetic acid with universal indicator, in which case would you get a red colour?
(a) sodium bicarbonate (b) hydrochloric acid (c) sodium hydroxide (d) acetic acid
22. The pH of a sample of pure water is 7 at room temperature. What is its pH when a pinch of solid sodium bicarbonate is dissolved in it?
(a) vary near to 7 (b) less than 7 (c) more than 7 (d) exactly 7
23. If an unknown solution turns blue litmus red, then the pH of the solution is more likely to be (a) 12 (b) 10 (c) 7 (d) 4
24. What is the pH of a 0.00001 molar HCl solution?
(a) 1 (b) 9 (c) 5 (d) 4
25. There are alternate acid base theories that define an acid as any species that can
{hint: According to Bronsted-Lowry theory, an acid is any species that can donate a proton to another species.}
(a) donate a proton (2) donate an electron (c) accept a proton (d) accept an electron

26. What happens when a solution of an acid is mixed with a solution of a base in a test tube?

- (i) The temperature of the solution increases
- (ii) The temperature of the solution decreases
- (iii) The temperature of the solution remains the same
- (iv) Salt formation takes place

- (a) (i) only (b) (i) and (iii)
- (b) (ii) and (iii) (d) (i) and (iv)

27. An aqueous solution turns red litmus solution blue. Excess addition of which of the following solution would reverse the change?

- (a) Baking powder
- (b) Lime
- (c) Ammonium hydroxide solution
- (d) Hydrochloric acid

28. During the preparation of hydrogen chloride gas on a humid day, the gas is usually passed through the guard tube containing calcium chloride. The role of calcium chloride taken in the guard tube is to

- (a) absorb the evolved gas
- (b) moisten the gas
- (c) absorb moisture from the gas
- (d) absorb Cl^- ions from the evolved gas

29. Compounds such as alcohols and glucose contain hydrogen but are not categorized as acids. Describe an activity to prove it.

30. Why does distilled water not conduct electricity, whereas rain water does?

31. Why do acids not show acidic behavior in the absence of water?

32. Five solutions A, B, C, D and E when tested with universal indicator showed pH as 4, 1,

11, 7 and 9, respectively, which solution is: a) neutral b) strongly alkaline? c) strongly acidic d) weakly acidic e) weakly alkaline

Arrange the pH in increasing order of hydrogen ion concentration.

33. What is a neutralization reaction? Give two examples.

34. What happens when an acid or base is mixed with water?

35. Equal lengths of magnesium ribbons are taken in test tubes A and B. Hydrochloric acid is added to test tube A, while acetic acid is added to test tube B. The concentrations taken for both the acids are same in which test tube the reaction occur more vigorously and why?
36. Fresh milk has a pH of 6. How does the pH change as it turns to curd? Explain your answer.
37. A milkman adds a very small amount of baking soda to fresh milk.
- Why does he shift the pH of the fresh milk from 6 to slightly alkaline?
 - Why does this milk take a long time to set as curd?
38. Why does tooth decay start when the pH of mouth is lower than 5.5?
39. How does the flow of acid rain water into a river make the survival of aquatic life in a river difficult?
40. Dry hydrogen chloride gas does not turn blue litmus whereas hydrochloric acid does. Why?
41. What is meant by "water of crystallization" of a substance? Describe an activity to demonstrate water of crystallization.
42. Plaster of paris should be stored in a moisture - proof container. Explain why?
43. What is baking powder? How does it make the cake soft and spongy?
44. Give two important uses of washing soda and baking soda.
45. WHO AM I?
- I can roughly measure pH value from 0-14.
 - I am called antichlor and am used to remove excess chlorine from clothes when treated with bleaching powder.
 - I am a product of gypsum and am used to making chalks and fire proof materials.
 - I am a compound of calcium and can be used for disinfecting drinking water as well as for decolourisation.
 - I give different smell in acid and base solution.
 - I am an oxide capable of showing properties for both acids and bases.
 - I am a covalent compound and conducts electricity in aqueous medium.
 - I am a salt of potassium hydroxide and nitric acid.

- i) I am the term used when a solid becomes liquid when exposed to moist air.
- j) I am derived from tomato and turn blue litmus into red.
46. The colour of methyl orange indicator in acidic medium is: ()
 a. Yellow b green c orange d red
47. The colour of phenolphthalein indicator in basic solution is: ()
 a. Yellow b green c pink d orange
48. What is the colour methyl orange in alkaline medium? ()
 a orange b yellow c red d blue
49. A solution turns red litmus blue, its pH will be: ()
 a 1 b 4 c 5 d 10
50. A solution reacts with crushed egg-shells to give a gas that turns lime-water Milky, the solution contains: ()
 a NaCl b HCl c LiCl d KCl
51. Why is universal indicator a better one than litmus paper? ()
 a) Litmus paper can only be used for acids.
 b) Litmus paper can only be used for alkalis.
 c) Universal indicator goes green if something is neutral.
 d) Universal indicator is useful for all ranges of pH of the solution.
52. Water soluble bases are known as? ()
 a neutral b base c acid d alkali
54. Which of one of the following pairs of substances when mixed together produces table salt. ()
 a) Sodium thiosulphate and sulphur dioxide
 b) Hydro chloric acid and sodium hydroxide
 c) Chlorine and oxygen
 d) Nitric acid and sodium hydrogen carbonate
55. What colour would hydrochloric acid (pH=1) turn universal indicator. () a) Orange b) purple c) yellow d) red
56. Which one of the following medicines is used for treating indigestion. ()
 a) Antibiotic b) analgesic c) antacid d) antiseptic
57. If magnesium reacts with hydrochloric acid, what gas is produced? ()
 a) Hydrogen b) oxygen c) carbon dioxide d) chlorine

58. Which of the following is the most accurate way of representing neutralization? (

- a) Acid + base \rightarrow neutral solution
- b) Acid + base \rightarrow salt + water
- c) Acid + base \rightarrow sodium chloride + hydrogen
- d) Acid + base \rightarrow acidic solution

59. Fill in the following blanks:

- > A taste is a characteristic property of all acids in aqueous solution.
- > Acids react with some metals to produce gas
- > Aqueous acid solutions conduct electricity because they have
- > Acid reacts with base to produce a and water.
- > Acid turn methy orange to colour.
- > Bases tend to taste and feel
- > Aqueous basic solutions conduct electricity because they have .
- > Bases react with to produce a salt and
- > Bases turn phenolphthalein to colour.

61. Match the following:

- | | | |
|---------------------|-----|---|
| a) Plaster of Paris | () | 1) CaO C/2 |
| b) Gypsum | () | 2) NaHCO ₃ |
| c) Bleaching powder | () | 3) Na ₂ CO ₃ |
| d) Baking soda | () | 4) CaSO ₄ . / H ₂ O |
| e) Washing soda | () | 5) CaSO ₄ . 2 H ₂ O |

62. Which of the following salts does not contain water of crystallisation?

- (a) Blue vitriol
- (b) Baking soda
- (c) Washing soda
- (d) Gypsum

63. Sodium carbonate is a basic salt because it is a salt of
- (a) strong acid and strong base
 - (b) weak acid and weak base
 - (c) strong acid and weak base
 - (d) weak acid and strong base
64. Calcium phosphate is present in tooth enamel. Its nature is
- (a) basic (b) acidic (c) neutral (d) amphoteric
65. A sample of soil is mixed with water and allowed to settle. The clear supernatant solution turns the pH paper yellowish-orange. Which of the following would change the colour of this pH paper to greenish-blue?
- (a) Lemon juice
 - (b) Vinegar
 - (c) Common salt
 - (d) An antacid
66. Which of the following gives the correct increasing order of acidic strength?
- (a) Water < Acetic acid < Hydrochloric acid
 - (b) Water < Hydrochloric acid < Acetic acid
 - (c) Acetic acid < Water < Hydrochloric acid
 - (d) Hydrochloric acid < Water < Acetic acid
67. If a few drops of a concentrated acid accidentally spills over the hand of a student, what should be done?
- (a) Wash the hand with saline solution
 - (b) Wash the hand immediately with plenty of water and apply a paste of sodium hydrogencarbonate
 - (c) After washing with plenty of water apply solution of sodium hydroxide on the hand
 - (d) Neutralise the acid with a strong alkali
68. Sodium hydrogencarbonate when added to acetic acid evolves a gas. Which of the following statements are true about the gas evolved?
- (i) It turns lime water milky
 - (ii) It extinguishes a burning splinter
 - (iii) It dissolves in a solution of sodium hydroxide
 - (iv) It has a pungent odour

- (a) (i) and (ii) (b) (i), (ii) and (iii)
- (c) (ii), (iii) and (iv) (d) (i) and (iv)

69. Common salt besides being used in kitchen can also be used as the raw material for making

- (i) washing soda
- (ii) bleaching powder
- (iii) baking soda
- (iv) slaked lime

- (a) (i) and (ii) (b) (i), (ii) and (iv)
- (c) (i) and (iii) (d) (i), (iii) and (iv)

70. One of the constituents of baking powder is sodium hydrogen carbonate, the other constituent is

- (a) hydrochloric acid
- (b) tartaric acid
- (c) acetic acid
- (d) sulphuric acid

71. To protect tooth decay we are advised to brush our teeth regularly. The nature of the tooth paste commonly used is

- (a) acidic
- (b) neutral
- (c) basic
- (d) corrosive

72. Which of the following statements is correct about an aqueous solution of an acid and of a base?

- (i) Higher the pH, stronger the acid
- (ii) Higher the pH, weaker the acid
- (iii) Lower the pH, stronger the base
- (iv) Lower the pH, weaker the base

- (a) (i) and (iii) (b) (ii) and (iii)
- (c) (i) and (iv) (d) (ii) and (iv)

73. The pH of the gastric juices released during digestion is

- (a) less than 7
- (b) more than 7
- (c) equal to 7

(d) equal to 0

74. Which of the following phenomena occur, when a small amount of acid is added to water?

(i) Ionisation

(ii) Neutralisation

(iii) Dilution

(iv) Salt formation

(a) (i) and (ii) (b) (i) and (iii)

(c) (ii) and (iii) (d) (ii) and (iv)

75. Which one of the following can be used as an acid-base indicator by a visually impaired student?

(a) Litmus

(b) Turmeric

(c) Vanilla essence

(d) Petunia leaves

76. Which of the following substance will not give carbon dioxide on treatment with dilute acid?

(a) Marble

(b) Limestone

(c) Baking soda

(d) Lime

77. Which of the following is acidic in nature?

(a) Lime juice

(b) Human blood

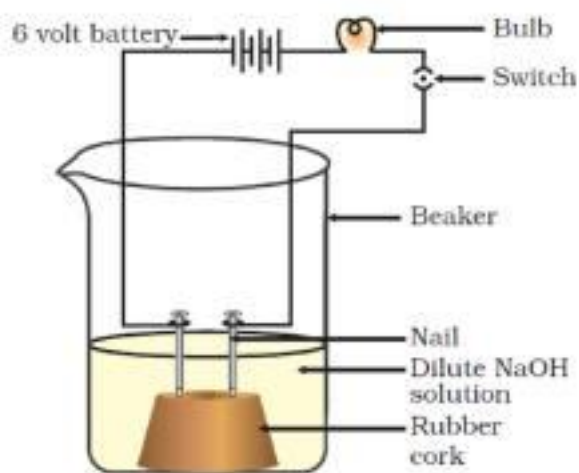
(c) Lime water

(d) Antacid

78. In an attempt to demonstrate electrical conductivity through an electrolyte, the following apparatus (see below Figure) was set up. Which among the following statement(s) is(are) correct?

(i) Bulb will not glow because electrolyte is not acidic

- (ii) Bulb will glow because NaOH is a strong base and furnishes ions for conduction.
- (iii) Bulb will not glow because circuit is incomplete
- (iv) Bulb will not glow because it depends upon the type of electrolytic solution (a) (i) and (iii) (b) (ii) and (iv)



(c) (ii) only (c) (iv) only

79. Which of the following is used for dissolution of gold?
- (a) Hydrochloric acid
 - (b) Sulphuric acid
 - (c) Nitric acid
 - (d) Aqua regia
80. Which of the following is not a mineral acid?
- (a) Hydrochloric acid
 - (b) Citric acid
 - (c) Sulphuric acid
 - (d) Nitric acid
81. Which among the following is not a base?
- (a) NaOH
 - (b) KOH
 - (c) NH₄OH
 - (d) C₂H₅OH
82. Which of the following statements is not correct?

(a) All metal carbonates react with acid to give a salt, water and carbon dioxide

(b) All metal oxides react with water to give salt and acid

(c) Some metals react with acids to give salt and hydrogen

(d) Some non metal oxides react with water to form an acid

83. Which of the following is(are) true when HCl (g) is passed through water?

(i) It does not ionise in the solution as it is a covalent compound.

(ii) It ionises in the solution

(iii) It gives both hydrogen and hydroxyl ion in the solution

(iv) It forms hydronium ion in the solution due to the combination of hydrogen ion with water molecule

(a) (i) only (b) (iii) only

(c) (ii) and (iv) (d) (iii) and (iv)

84. Which of the following statements is true for acids?

(a) Bitter and change red litmus to blue

(b) Sour and change red litmus to blue

(c) Sour and change blue litmus to red

(d) Bitter and change blue litmus to red

85. Which of the following are present in a dilute aqueous solution of hydrochloric acid?

(a) $\text{H}_3\text{O}^+ + \text{Cl}^-$

(b) $\text{H}_3\text{O}^+ + \text{OH}^-$

(c) $\text{Cl}^- + \text{OH}^-$

(d) unionised HCl

86. Identify the correct representation of reaction occurring during chloralkali process

(a) $2\text{NaCl}(\text{l}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 2\text{NaOH}(\text{l}) + \text{Cl}_2(\text{g}) + \text{H}_2(\text{g})$

(b) $2\text{NaCl}(\text{aq}) + 2\text{H}_2\text{O}(\text{aq}) \rightarrow 2\text{NaOH}(\text{aq}) + \text{Cl}_2(\text{g}) + \text{H}_2(\text{g})$

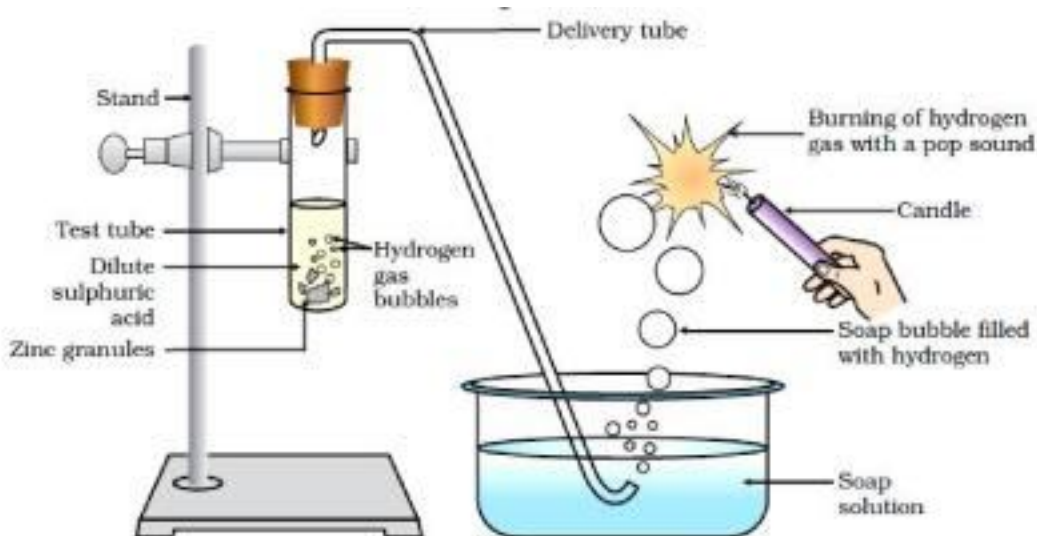
(c) $2\text{NaCl}(\text{aq}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 2\text{NaOH}(\text{aq}) + \text{Cl}_2(\text{aq}) + \text{H}_2(\text{aq})$

(d) $2\text{NaCl}(\text{aq}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 2\text{NaOH}(\text{aq}) + \text{Cl}_2(\text{g}) + \text{H}_2(\text{g})$

87. What will be the action of the following substances on litmus paper?

Dry HCl gas, Moistened NH_3 gas, Lemon juice, Carbonated soft drink, Curd, Soap solution.

88. Name the acid present in ant sting and give its chemical formula. Also give the common method to get relief from the discomfort caused by the ant sting.
89. A student prepared solutions of (i) an acid and (ii) a base in two separate beakers. She forgot to label the solutions and litmus paper is not available in the laboratory. Since both the solutions are colourless, how will she distinguish between the two?
90. How would you distinguish between baking powder and washing soda by heating?
91. Salt - A commonly used in bakery products on heating gets converted into another salt B which itself is used for removal of hardness of water and a gas C is evolved. The gas C when passed through lime water, turns it milky. Identify A, B and C.
92. In one of the industrial processes used for manufacture of sodium hydroxide, a gas X is formed as by product. The gas X reacts with lime water to give a compound Y which is used as a bleaching agent in chemical industry. Identify X and Y giving the chemical equation of the reactions involved.
93. What are strong and weak acids? In the following list of acids, separate strong acids from weak acids. Hydrochloric acid, citric acid, acetic acid, nitric acid, formic acid, sulphuric acid.
94. When zinc metal is treated with a dilute solution of a strong acid, a gas is evolved, which is utilised in the hydrogenation of oil. Name the gas evolved. Write the chemical equation of the reaction involved and also write a test to detect the gas formed.
95. In the following schematic diagram for the preparation of hydrogen gas as shown in below Figure, what would happen if following changes are made?



(a) In place of zinc granules, same amount of zinc dust is taken in the test tube

- (b) Instead of dilute sulphuric acid, dilute hydrochloric acid is taken
- (c) In place of zinc, copper turnings are taken
- (d) Sodium hydroxide is taken in place of dilute sulphuric acid and the tube is heated.

96. For making cake, baking powder is taken. If at home your mother uses baking soda instead of baking powder in cake,

- (a) how will it affect the taste of the cake and why?
- (b) how can baking soda be converted into baking powder?
- (c) what is the role of tartaric acid added to baking soda?

97. A metal carbonate X on reacting with an acid gives a gas which when passed through a solution Y gives the carbonate back. On the other hand, a gas G that is obtained at anode during electrolysis of brine is passed on dry Y, it gives a compound Z, used for disinfecting drinking water. Identity X, Y, G and Z.

98. A dry pellet of a common base B, when kept in open absorbs moisture and turns sticky.

The compound is also a by-product of chloralkali process. Identify B. What type of reaction occurs when B is treated with an acidic oxide? Write a balanced chemical equation for one such solution.

99. A sulphate salt of Group 2 element of the Periodic Table is a white, soft substance, which can be moulded into different shapes by making its

dough. When this compound is left in open for some time, it becomes a solid mass and cannot be used for moulding purposes. Identify the sulphate salt and why does it show such a behaviour? Give the reaction involved.

100. Identify the compound X on the basis of the reactions given below. Also, write the name and chemical formulae of A, B and C.

