

Objective Test
Acids, Bases and Salts

Time – 40 Min

M.M.-120

Q.1. Incorrect statement about acids is-

- (a) They have sour taste
- (b) They may change the colour of an indicator
- (c) They change the colour of blue litmus to red
- (d) They change the colour of red litmus to blue

Ans-(d) They change the colour of red litmus to blue

Explanation- Acids change the colour of blue litmus to red, but not red litmus to blue.

Q.2. Incorrect statement about bases is-

- (a) They have bitter taste
- (b) They may change the colour of an indicator
- (c) They change the colour of blue litmus to red
- (d) They change the colour of red litmus to blue

Ans-(c) They change the colour of blue litmus to red

Explanation- Bases change the colour of red litmus to blue, but not blue litmus to red.

Q.3. Which of the following is not a natural indicator-

- (a) Litmus
- (b) Turmeric
- (c) Methyl orange
- (d) None of the above

Ans-(c) Methyl orange

Explanation- Methyl orange is a synthetic indicator.

Q.4. Which of the following is a synthetic indicator-

- (a) Litmus
- (b) Turmeric
- (c) Phenolphthalein
- (d) None of the above

Ans-(c) Phenolphthalein

Explanation- Phenolphthalein is a synthetic indicator.

Q.5. Which of the following is an olfactory indicator-

- (a) Litmus
- (b) Turmeric
- (c) Onion
- (d) All the above

Ans-(c) Onion

Explanation- Onion, Clove oil and Vanilla extract are olfactory indicators which retain their characteristic odour in acidic medium, but lose their odour in basic medium.

Q.6. The colour of phenolphthalein in acidic solution is-

- (a) Red
- (b) Yellow
- (c) Colourless
- (d) Orange

Ans-(c) Colourless

Explanation- Phenolphthalein is colourless in neutral and acidic solutions, but it is pink in basic medium.

Q.7. The colour of methyl orange in basic solution is-

- (a) Red
- (b) Yellow
- (c) Colourless
- (d) Orange

Ans-(b) Yellow

Explanation- Methyl orange is orange coloured in neutral solution, red coloured in acidic solution and yellow coloured in basic solution.

Q.8. Which of the following acid is present in sour milk?

- (a) Glycolic acid (b) Lactic acid
- (c) Citric acid (d) Tartaric acid

Ans-(b) Lactic acid

Explanation- Sour milk contains lactic acid.

Q.9. An acid (A) with sodium hydrogen carbonate is used in making the cakes fluffy and spongy. It is due to the release of a gas (B) in the reaction. Here, A and B are-

- (a) A = Oxalic acid and B = CO₂ (b) A = Tartaric acid and B = O₂
- (c) A = Succinic acid and B = H₂ (d) A = Tartaric acid and B = CO₂

Ans-(d) A = Tartaric acid and B = CO₂

Explanation- Tartaric acid reacts with sodium hydrogen carbonate to release CO₂ gas which makes the cakes fluffy and spongy.

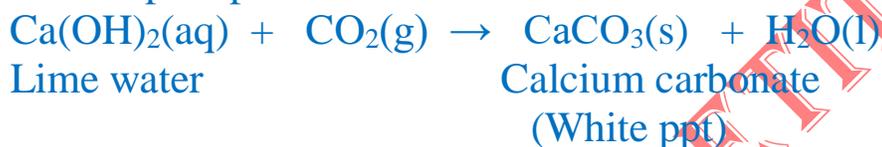


Q.10. When CO₂ is passed through lime water, it turns milky. The milky colour is due to the formation of -

- (a) CaCO₃ (b) Ca(OH)₂
(c) H₂O (d) CO₂

Ans-(a) CaCO₃

Explanation- When CO₂ is passed through lime water, it turns milky due to the formation of white precipitate of calcium carbonate.



Q.11. When aqueous sodium carbonate (Na₂CO₃) reacts with HCl(aq), it gives-

- (a) NaOH, H₂(g) and CO₂(g)
(b) NaCl, H₂O and CO₂(g)
(c) NaHCO₃, H₂(g) and CO₂(g)
(d) NaHCO₃, H₂O and CO₂(g)

Ans-(b) NaCl, H₂O and CO₂(g)

Explanation- When aqueous sodium carbonate (Na₂CO₃) reacts with HCl(aq), it forms NaCl, H₂O and CO₂(g).



Q.12. Chemical formula of baking soda is-

- (a) MgSO₄ (b) Na₂CO₃
(c) NaHCO₃ (d) MgCO₃

Ans-(c) NaHCO₃

Explanation- Chemically sodium hydrogencarbonate (NaHCO₃) is called baking soda.

Q.13. The acid found in vinegar is-

- (a) Formic acid (b) Acetic acid
(c) Tartaric acid (d) Citric acid

Ans-(b) Acetic acid

Explanation- Acetic acid (6 - 10%) is found in vinegar.

Q.14. The acid found in red ant is-

- (a) Formic acid
- (b) Acetic acid
- (c) Tartaric acid
- (d) Citric acid

Ans-(a) Formic acid

Explanation- The acid found in red ant is formic acid.

Q.15. The reaction of an acid with a base is called-

- (a) Neutralization
- (b) Displacement
- (c) Substitution
- (d) Decomposition

Ans-(a) Neutralization

Explanation- The reaction of an acid with a base is called neutralization reaction.

Q.16. If a person is suffering from acidity, then you will suggest him to take-

- (a) Baking soda solution
- (b) Vinegar
- (c) Plenty of water
- (d) A glass of milk

Ans-(a) Baking soda solution

Explanation- If a person is suffering from acidity, then we will suggest him to take an antacid such as baking soda solution.

Q.17. A blue litmus paper was first dipped in dil. HCl and then in dil. NaOH solution.

It was observed that the colour of the litmus paper-

- (a) Changed to red
- (b) Changed first to red and then to blue
- (c) Changed blue to colourless
- (d) Remains blue in both the solutions

Ans-(b) Changed first to red and then to blue

Q.18. 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

Ans-(d) Hydrochloric acid

Q.19. The organic acid present in tomato is

- (a) Oxalic acid
- (b) Lactic acid
- (c) Malic acid
- (d) Tartaric acid

Ans-(a) Oxalic acid

Q.20. Which of the following is acidic in nature-

- (a) Apple juice
- (b) Soap solution
- (c) Slaked lime
- (d) Lime

Ans-(a) Apple juice

Q.21. Which of the following will not turn blue litmus red-

- (a) Apple juice
- (b) Soap solution
- (c) Tomato juice
- (d) Vinegar

Ans-(b) Soap solution

Q.22. Which of the following will not turn blue litmus red-

- (a) HCl
- (b) NaOH
- (c) CH_3COOH
- (d) Vinegar

Ans-(b) NaOH

Q.23. Which of the following will not turn red litmus blue-

- (a) HCl
- (b) NaOH
- (c) NH_4OH
- (d) Baking soda solution

Ans-(a) HCl

Q.24. Olfactory indicator is-

- (a) Onion
- (b) Vanilla Extract
- (c) Clove oil
- (d) All the above

Ans-(d) All the above

Q.25. Olfactory indicator in basic medium have-

- (a) Their characteristic smell
- (b) Pungent smell
- (c) Pleasant smell
- (d) No smell

Ans-(d) No smell

Q.26. $\text{CuO} + \text{X} \rightarrow \text{CuSO}_4 + \text{H}_2\text{O}$

Here X is-

- (a) CuSO_4
- (b) HCl
- (c) H_2SO_4
- (d) HNO_3

Ans-(c) H_2SO_4

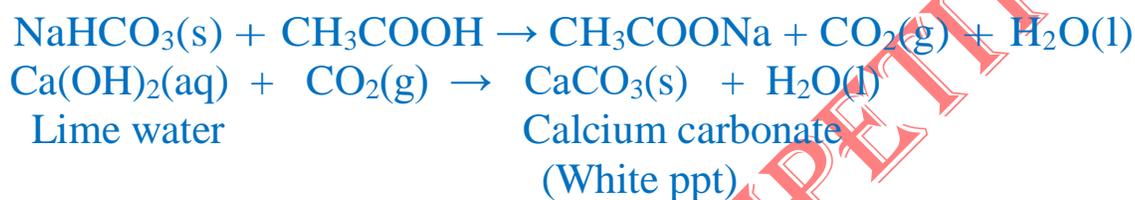
Explanation- $\text{CuO} + \text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + \text{H}_2\text{O}$

Q.27. When acetic acid is added to a solid compound X taken in a test tube, a colourless and odourless gas evolves, which turns lime water milky. It is concluded that-

- (a) Solid X is sodium hydroxide and the gas evolved is CO₂
- (b) Solid X is sodium bicarbonate and the gas evolved is CO₂
- (c) Solid X is sodium acetate and the gas evolved is CO₂
- (d) Solid X is sodium chloride and the gas evolved is CO₂

Ans-(b) Solid X is sodium bicarbonate and the gas evolved is CO₂

Explanation- When acetic acid is added to sodium bicarbonate (X) taken in a test tube, a colourless and odourless gas (CO₂) evolves, which turns lime water milky due to the formation of white precipitate of calcium carbonate.



Q.28. Antacids contain-

- (a) Weak base
- (b) Weak acid
- (c) Strong base
- (d) Strong acid

Ans-(a) Weak base

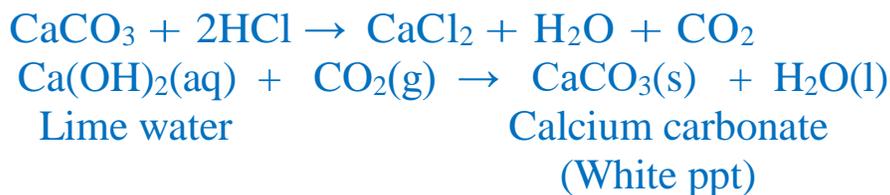
Explanation- Antacids are weak bases such as Mg(OH)₂, NaHCO₃ etc. which are given to a patient suffering from acidity. These antacids neutralise the acids produced and give relief to the patient.

Q.29. 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

Ans-(b) HCl

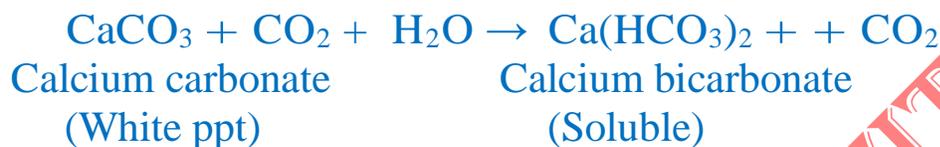
Explanation- The egg-shells are made up of calcium carbonate. When it is reacted with HCl, CO₂ gas is released which turns lime water milky.



- Q.30.** On prolong supply of $\text{CO}_2(\text{g})$ in lime solution (lime-water), it is observed that-
- (a) Lime solution changes to gaseous state
 - (b) The milkiness of lime water disappears
 - (c) The milkiness of lime water changes from white to red
 - (d) The colour of lime water becomes black

Ans-(b) The milkiness of lime water disappears

Explanation- On prolong supply of $\text{CO}_2(\text{g})$ in lime solution (lime-water), it is observed that, the milkiness of lime water disappears due to conversion of insoluble calcium carbonate into soluble calcium bicarbonate.



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