

Class: VII  
Subject: Chemistry  
Topic: Acids and bases  
No. of Questions: 20

1. Ammonia is found in many household products, such as window cleaners. It turns red litmus blue. What is its nature?

Ans: Since it turns red litmus blue, Ammonia is basic in nature.

2. State few properties of acids.

Ans:

- a. Acids are sour in taste
- b. The chemical nature of such substances is acidic
- c. Acid turns blue litmus red
- d. It gives hydrogen ion when dissolved in water
- e. Do not give any colour with phenolphthalein indicator
- f. Do not absorb carbon dioxide gas
- g. Acids do not react with ammonium salt
- h. Acids are generally found in Vinegar, Curd, Spinach, lemons, Citrus fruits, Amla, Tamarind, grapes, unripe mangoes, Citrus fruits such as oranges, etc.

3. ----- and ----- acid are present in vinegar and lemon.

Ans. [ acetic acid, citric acid]

4. State few properties of bases.

Ans:

- a. Bases are bitter in taste and soapy to touch
- b. Base turns red litmus blue
- c. The nature of such substances is said to be basic
- d. It gives hydroxide ions when dissolves in water
- e. It give pink colour with phenolphthalein indicator
- f. Some bases like NaOH absorbs carbon dioxide gas
- g. Bases are generally found in lime water, soap, window cleaner, Milk of Magnesia
- h. Reacts with ammonium salt to give ammonia gas

5. Name the source from which litmus solution is obtained. What is the use of this solution?

Ans: Litmus is extracted from plant lichens. It has a mauve (purple) colour when dissolved in distilled water. Litmus solution is used to detect acidic or basic nature of any substance. When added to an acidic solution, it turns red and when added to a basic solution, it turns blue

6. ----- is the colour of methyl orange in acidic solution.

Ans. [ pink]

7. Give examples of some acids and bases

Ans: Curd, lemon juice, vinegar, orange juice etc. are acids and baking soda, lime water etc. are bases.

8. Is the distilled water acidic/basic/neutral? How would you verify it?

Ans: Distilled water is neutral by nature. We can verify by performing litmus paper test. It neither turns blue litmus into red. Nor it turns red litmus into blue.

9. Phenolphthalein become colourless in ---- and pink in -----

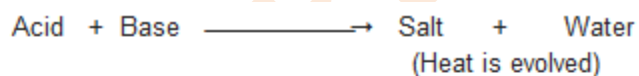
Ans. [ Acid, base]

10. Define indicators along with examples.

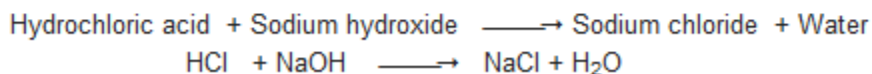
Ans: Indicators are special type of substance that are used to taste whether a substance is acidic or basic in nature. It change the colour of acidic or basis substances when added into it. Turmeric, litmus, etc. are some natural indicators.

11. Describe the process of neutralization with the help of an example.

Ans: The reaction between an acid and a base is known as neutralization. Salt and water are produced in this process with the evolution of heat.



For example, when Hydrochloric acid (HCl) reacts with a base Sodium hydroxide (NaOH), it forms a salt (Sodium Chloride) and Water (H<sub>2</sub>O).



12. Water molecules present in salts are known as -----

Ans. [water of crystallization]

13. In distilled water , litmus paper turns into \_\_\_\_\_

Ans: Litmus is extracted from lichens. It is most commonly used as an indicator to determine the chemical nature of substance. It has mauve or purple colour in distilled water. When it is added to an acidic solution, it turns red and when added to a basic solution, it turns blue. It is available in the form of a solution, or in the form of strips of paper, known as litmus paper. Generally, it is available as red and blue litmus paper.

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

- (i) Nitric acid turn red litmus blue. (T/F)
- (ii) Sodium hydroxide turns blue litmus red. (T/F)
- (iii) Sodium hydroxide and hydrochloric acid neutralize each other and form salt and water. (T/F)
- (iv) Indicator is a substance which shows different colours in acidic and basic solutions. (T/F)
- (v) Tooth decay is caused by the presence of a base. (T/F)

Ans:

- (i) Nitric acid red litmus blue. (False)
- (ii) Sodium hydroxide turns blue litmus red (False)
- (iii) Sodium hydroxide and hydrochloric acid neutralise each other and form salt and water. (Ture)
- (iv) Indicator is a substance which shows different colours in acidic and basic solutions. (True)
- (v) Tooth decay is caused by the presence of a base. (False)

15. Salts containing water molecules in their crystal form are called -----

Ans. [hydrated salts]

16. What is the use of litmus test?

Ans: To test the nature of a substance for an acid or a base or a neutral, litmus test is performed in which the Acid turns blue litmus red, Bases turn red litmus blue and has no effect on neutral substance.

17. Explain why:
- (a) An antacid tablet is taken when you suffer from acidity.
  - (b) Calamine solution is applied on the skin when an ant bites.
  - (c) Factory waste is neutralized before disposing it into the water bodies.

Ans: (a) Due to spicy food, our stomach releases excess of hydrochloric acid which causes acidity or indigestion. An antacid tablet consists of a base like Milk of magnesia (magnesium hydroxide). It neutralizes the effect of excessive acid and brings relief.

(b) The sting of an ant contains formic acid which causes irritation on the skin. Calamine solution contains zinc carbonate which is a base. Calamine solution neutralizes the acid effect of the ant bite when applied on the skin.

(c) The wastes of many factories contain acids. If they are allowed to flow into the water bodies, the acids will kill fish and the organisms. The factory wasters are, therefore, neutralized by adding basic substances.

18. Aqueous solution of sodium chloride (NaCl) is known as -----

Ans. [ Brine]

19. Explain the nature of distilled water.

Ans: The Distilled water is neutral. It is neither sour (Acidic) nor bitter (Basic), to verify its chemical nature, we can perform litmus test. It neither turns blue litmus red nor red litmus blue hence we can say, distilled water is a neutral substance.

20. Blue litmus paper is dipped in a solution. It remains blue. What is the nature of the solution ? Explain.

Ans. If a blue litmus paper when dipped in a solution, remains blue, it implies the solution is either basic or neutral.

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