Chapter 5 Acids Bases and Salts

Ans.

Acids	*Bases*
(*i*) Acids are sour to taste. (*ii*) Acid turns blue litmus to red. (*iii*) Acid is a substance which contains hydrogen ion (H^+).	(*i*) Bases are bitter to taste. (*ii*) Base turns red litmus to red. (*iii*) Bases are substances which contain hydroxyl ion (OH^-).

Q.2.Ammonia is found in many household products, such as window cleaners. It turns red litmus blue. What is its nature?

Ans.*Ammonia has basic nature.*

Q.3.Name the source from which litmus solution is obtained. What is the use of this solution?

Ans.*Litmus solution is extracted from lichens. It is used to determine whether the given solution is acidic or basic.*

Q.4.Is the distilled water acidic/basic/neutral? How would you verify it?

Ans.*Distilled water will be neutral. We can verify it by showing that neither blue nor red litmus paper changes its colour when dipped in it.*

Q.5.Describe the process of neutralisation with the help of an example.

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

Antacids like milk of magnesia (magnesium hydroxide), baking soda, etc. which contain a base are used for reducing acidity in stomach when excessive acid released by glands.

Q.6.Mark 'T' if the statement is true and 'F' if it is false:

(i) Nitric acid turns red litmus blue. (T/F)

(ii) Sodium hydroxide turns blue litmus red. {T/F)

(iii) Sodium hydroxide and hydrochloric acid neutralise each other and form salt and water. (T/F)

(id) 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.*(1) F (ii) F (iii) T (iv) T (V) F*

Q.7. Dorji has a few bottles of soft drink in his restaurant. But, unfortunately, these are not labelled. He has to serve the drinks on the demand of customers. One customer wants acidic drink, another wants basic and third one wants neutral drink. How will Dorji decide which drink is to be served to whom?

Ans.*Dorji can decide with the help of litmus paper:*

(i) The drink which would turn a red litmus blue would be basic.

(ii) If the drink turns a blue litmus to red would be acidic.

(iii) The drink which would not affect both red and blue litmus would be neutral.

Q.8.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 neutralised before disposing it into the water bodies.

Ans.*(a) We take an antacid such as milk of magnesia to neutralises the excessive acid released in stomach.*

(b) Ant injects an acidic liquid (Formic acid) into the skin on biting which causes inflammation, to the skin. The effect of the acid can be neutralised by rubbing. Calamine solution which contains zinc carbonate which is very weak base and causes no harm to the skin.

(c) The wastes of factories contain acids. If acids are disposed off in the water body, the acids will harm the organisms. So factory wastes are neutralised by adding basic substances.

Q.9. Three liquids are given to you. One is hydrochloric acid, another is sodium hydroxide and third is a sugar solution. How will you identify them? You have only turmeric indicator.

Ans.*Name of the substances Effect on turmeric indicator*

1. Hydrochloric acid Yellow to blue

2. Sodium hydroxide Yellow to red

3. Sugar solution No change

Q.10. Blue litmus paper is dipped in a solution. It remains blue. What is the nature of the solution? Explain.

Ans. *(i) It can be identified on the basis of the following observations : Bases change the colour of litmus paper to blue. As the colour of blue litmus paper is not affected, the solution must be basic.*

(ii) If the solution is neutral, even then colour of litmus will not change.

Q. 11. Consider the following statements:

(a) Both acids and bases change colour of all indicators.

(b) If an indicator gives a colour change with an acid, it does not give a change with a

base.

(c) If an indicator changes colour with a base, it does not change colour with an acid.

(d) Change of colour in an acid and a base depends on the type of the indicator. Which of these statements are correct?

(i) All four (ii) (a) and (d) (iii) (b) and (c) (iv) only (d)

Ans. *(ii) (a) and (d)*