NCERT SOLUTIONS -

CHAPTER-5- ACIDS BASES AND SALTS

Question 1. State differences between acids and bases.

Answer:

Acids	Bases
(i) Acids are sour in taste.	(i) Bases are bitter in taste.
(ii) It turns litmus paper red.	(ii) It turns litmus paper blue.
(iii) It doesn't change the colour of turmeric indicator.	(iii) It changes the colour of turmeric indicator to red.
(iv) It doesn't feel soapy on touching.	(iv) It feels soapy on touching.

Question 2. Ammonium is found in many household products, such as window cleaners. it turns red litmus blue. What is its nature?

Answer: Ammonia has basic nature.

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

Answer: Lichens are used as an indicator to determine whether the given solution is acidic or basic.

Question 4. Is the distilled water acidic, basic or neutral? How would you verify it?

Answer: Distilled water is neutral.It can be verified with the help of red and blue litmus paper. It shows no change with both kinds of litmus paper.

Question 5. Describe the process of neutralization with the help of an example.
Answer: The process in which an acid reacts with a base to form salt and water is known as neutralisation reaction. The reaction is given below,

The reaction can be written as:

Hydrochloric acid + Sodium hydroxide →Sodium + Water

Chloride

$$HCl + NaOH \rightarrow NaCl + H_2O$$

Question 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)
(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)

Answer: (i) F (ii) F (iii) T (iv) T (v) F

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

Answer: He can decide by the use of indicators. If the sample of drink turns red litmus blue, it is basic. If it does not turn blue litmus red, it is acidic. If it does not affect litmus, it is neutral.

Question 8. Explain why:

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

Answer: (a) Antacids are nothing but bases. When there is excess acid in the stomach, an antacid tablet neutralizes the acids and relieves us.

(b) Ant injects an acid during a bite which causes the burning sensation. The Calamine solution is basic in nature. It neutralises the acid and relieves the pain.

(c) Factory wastes contain both acidic and basic substances. These are harmful for the organisms living in water. So, these should be neutralized before disposing.

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

Answer: Dip the turmeric indicator in each liquid. The liquid in which the colour of turmeric indicator changes to

red is basic in nature i.e. sodium hydroxide. Since, we already identified sodium hydroxide. We will pour the sodium hydroxide in two other bottles. The liquid which gets warm after pouring the sodium hydroxide(base) in it is of hydrochloric acid as heat is evolved in the neutralisation process. The last one which shows no effect is the liquid of sugar solution.

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

Answer: The above solution could be a base or a neutral solution because blue litmus paper doesn't change its colour in the neutral as well as the basic solution.

Question 11. Consider the following statements:

(a) Both acids and bases change colour at 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 b

(iii) b and c
(iv) only d.

Answer: (iv) only d.