Class–VII (CHAPTER-05) ACIDS, BASES AND SALTS

Questions

1. State differences between acids and bases.
2. Ammonium is found in many household products, such as window cleaners. It turns red litmus blue. What is its nature?
3. Name the source from which litmus solution is obtained. What is the use of this solution?
4. Is the distilled water acidic/basic/neutral? How would you verify it?
5. Describe the process of neutralization with the help of an example.
6. Mark 'T' if the statement is true and 'F' if it is false.
   (i) Nitric acid turns blue litmus red. (T/F)
   (ii) Sodium hydroxide turns blue litmus red. (T/F)
   (iii) Sodium hydroxide and hydrochloric acid neutralize each other and forms salts 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)
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 it to be served to whom?
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 neutralized before disposing it into the water bodies.
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.
10. Blue litmus paper is dipped in a solution. It remains blue. What is the nature of the solution? Explain.
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.

Class–VII (CHAPTER-05) ACIDS, BASES AND SALTS

Answers

1. Acids are sour and turn blue litmus red. Bases are bitter and turn red litmus blue.
2. Basic
3. Lichens. It is used as indicator.
4. Distilled water is neutral.
5. The reaction between an acid and a base is known as neutralization. Salts and water are produced in this process with the evolution of heat.

   Acids + Bases -→ Salt + water

   $HCl + NaOH \rightarrow NaCl + H_2O$.
6. (i) F (ii) F (iii) T (iv) T (v) F
7. He can decide by the use of indicator. 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.
8. (a) Antacids are nothing but bases. When there is excess of acid in stomach, antacids are taken. Antacids neutralize the acids and relieve us.

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

   (c) Factory wastes contain both acidic and basic substances. These are harmful for the organisms living in water. So, these are neutralized.
9. Turmeric solution turns red in contact with bases. It is not affected by acids and neutral substances.

   At first we will identify the base.

   The base is taken and turmeric is added. It will turn red. Then, one of the solution is added to it gradually. If the solution turns yellow again, the added liquid is Hydrochloric acid. Otherwise the added liquid is sugar solution.
10. The solution may be neutral or basic. Both types of substance have no effect on blue litmus.
11. (iv) only d.