

BCM SCHOOL BASANT AVENUE DUGRI ROAD, LUDHIANA

SCIENCE ASSIGNMENT (2023 - 2024)

CLASS – X

CH – ACIDS, BASES & SALTS

(ANSWER KEY)

1. In the absence of litmus paper, other natural or synthetic substances can be used to test acid and bases. Such substances are called indicators. Indicators such as methyl orange and phenolphthalein can be used to test the nature of a solution. These indicators show change in their colour in acidic, neutral and basic solutions. We can also use natural indicators such as turmeric and grape juice.
2. (A) Give milk of magnesia (magnesium hydroxide) which is an antacid which is basic in nature and it will react with excess acid in the stomach which has caused uneasiness. The antacid will neutralise the excess acid and mother will feel good. If antacid is not available, baking soda solution or Eno can be given.
(B) Apply a paste of baking soda and water at the stung area. After some time, your friend will be relieved of pain. Wasps release methanoic acid into the skin, when they bite. Baking soda paste is basic in nature and it will neutralise the effect of wasp's sting which is acidic.
(C) If the soil of farm is acidic, apply calcium oxide or calcium hydroxide which are basic in nature and they will neutralize the excess acid in the soil and plants will start growing good.
3. Curd and sour substances contain acids which react with brass and copper vessels to form poisonous salts which are harmful for our health.
4. The hand should be washed immediately with plenty of water and a paste of sodium hydrogen carbonate (a base) must be applied to neutralise the acid.
5. i) Lemon and orange.
(ii) Tomatoes and Guava.
(iii) Sour milk (curd)
(iv) Tamarind.
6. The fruit is acidic as it turns blue litmus solution to red.
7. (a) Black currant and strawberry
(b) Potato (4.5 – 6.0)
(c) Mint (7.0 – 8.0)
(d) 6.0 – 7.0
8.

Substance	Action on Litmus Paper
Dry HCl gas	No change
Moistened NH ₃ gas	Turns red to blue as it is basic.
Lemon juice	Turns blue to red because it contains citric acid.
Carbonated soft drink	Turns blue to red because it contains carbonic acid.
Curd	Turns blue to red because it contains lactic acid.
Soap solution	Turns red to blue as it is basic.

9. a) The bulbs will start glowing as it contains hydrogen ions H⁺ ions (aq) as cation and Cl⁻ or SO₄²⁻ as anion.

b) They do not contain free ions neither cation nor anion. To conduct electricity, free ions are required.

c) Acidic behaviour is shown by releasing of H⁺ ions from acids. To dissociate into H⁺ ions, the acids need medium i.e. water.

d) Rain water will conduct electricity as it contains both positive and negative ions of different salts in it.

e) The acid contains Hydrogen ions in solutions as well as anions. Due to the presence of free ions they conduct electricity.

10. a) CaSO₄ · 2H₂O

b) CaSO₄ · 2H₂O + heat → CaSO₄ · 1/2 H₂O + 1 1/2 H₂O

c) It is used by doctor for supporting of fractured bones, to make toys etc.

d) CaSO₄ · 1/2 H₂O + 1 1/2 H₂O → CaSO₄ · 2H₂O

e) 2 denotes the two water molecules as water of crystallisation.