

NTSE

NCERT Solutions for Class 10 Science
CHEMISTRY – Acids, Bases & Salts



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NCERT ANNEXURE

Here are subjective type questions and answers for your reference:

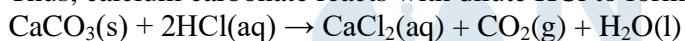
1. You have been provided with three test tubes. One of them contains distilled water and the other two contain an acidic solution and a basic solution, respectively. If you are given only red litmus paper, how will you identify the contents of each test tube?

Ans. First we will put red litmus in all three test tubes one by one; it will turn to blue in the basic solution. Then we will take it out and put it one by one in the remaining two test tubes. In acidic solution, it will turn red again, whereas in distilled water its colour will not change.

2. Metal compound A reacts with dilute hydrochloric acid to produce effervescence. The gas evolved extinguishes a burning candle. Write a balanced chemical equation for the reaction if one of the compounds formed is calcium chloride.

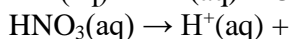
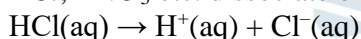
Ans. CO₂ is the gas which extinguishes fire. It is formed by the action of dilute on a metal carbonate or metal bicarbonate and produces effervescence.

Since one of the compounds formed is CaCl₂, it indicates that the metal compound (A) is calcium carbonate. Thus, calcium carbonate reacts with dilute HCl to form CaCl₂ and CO₂ as follows:



3. Why do HCl, HNO₃, etc. show acidic characters in aqueous solutions while solutions of compounds like alcohol and glucose do not show acidic character?

Ans. HCl, HNO₃ etc. dissociate or ionize in their aqueous solutions to give H⁺ ions.



Therefore, they show acidic characters whereas alcohol & glucose do not dissociate to give H⁺ ions in their aqueous solutions. Therefore, they do not show acidic character.

4. While diluting an acid, why is it recommended that the acid should be added to water and not water to the acid?

Ans. Since dilution of an acid is highly exothermic resulting in evolution of a large amount of heat which may lead to the splashing of acid or breaking of beaker if water is added to acid. Therefore, it is recommended that the acid should be added to water & not water to acid.

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5. Under what soil condition do you think a farmer would treat the soil of his fields with quick lime (Calcium oxide) or slaked lime (calcium hydroxide) or chalk (calcium carbonate)?

Ans. When the soil becomes acidic either due to acid rain, or due to excessive use of chemical fertilizers then, the farmer would treat the soil with basic substances like quicklime or slaked lime or chalk to neutralize the excess acid in the soil.

NCERT EXEMPLAR

1. An aqueous solution turns red litmus solution blue. Excess addition of which of the following solutions would reverse the change?

- (A) Baking powder (B) Lime
(C) Ammonium hydroxide solution (D) Hydrochloric acid

Ans. (D)

2. During the preparation of hydrogen chloride gas on a humid day, the gas is usually passed through the guard tube containing calcium chloride. The role of calcium chloride taken in the guard tube is to

- (A) Absorb the evolved gas (B) Moisten the gas
(C) Absorb moisture from the gas (D) Absorb Cl^- ions from the evolved gas

Ans. (C)

3. Sodium carbonate is a basic salt because it is a salt of:

- (A) Strong acid and strong base (B) Weak acid and weak base
(C) Strong acid and weak base (D) Weak acid and strong base

Ans. (D)

4. A sample of soil is mixed with water and allowed to settle. The clear supernatant solution turns the pH paper yellowish-orange. Which of the following would change the colour of this pH paper to greenish-blue?

- (A) Lemon juice (B) Vinegar (C) Common salt (D) An antacid

Ans. (D)

5. If a few drops of a concentrated acid accidentally spills over the hand of a student, what should be done?

- (A) Wash the hand with saline solution.
(B) Wash the hand immediately with plenty of water and apply a paste of sodium hydrogen carbonate.
(C) After washing with plenty of water, apply a solution of sodium hydroxide on the hand.
(D) Neutralise the acid with a strong alkali.

Ans. (B)

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I still wonder how one man has such a deep understanding of an examination. It becomes the truth what ever Nipin Sir says about NTSE.

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