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# Acids, Bases and Salts MCQ (Set I)



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1. What happens when a solution of an acid is mixed with a solution of a base in a test tube?

- (i) The temperature of the solution increases
  - (ii) The temperature of the solution decreases
  - (iii) The temperature of the solution remains the same
  - (iv) Salt formation takes place
- (a) (i) only
- (b) (i) and (iii)
- (c) (ii) and (iii)
- (d) (i) and (iv)**

- When an acid reacts with a base, salt is formed along with water. This reaction is known as the Neutralization reaction.
- Neutralization reactions are highly exothermic in nature. Thus, the temperature of the reaction increases.

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

- (a) Baking powder
- (b) Lime
- (c) Ammonium hydroxide solution
- (d) Hydrochloric acid

- If the solution turns red litmus to blue colour then the solution should be basic in nature. Its effect can be neutralized by adding an acid.

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3. 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  $\text{Cl}^-$  ions from the evolved gas

- Calcium is a good dehydrating agent. It has the property to absorb moisture. Hence it is used as a desiccant to dry gases and Hydrocarbons in the industries.

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4. Which of the following salts does not contain water of crystallization?

- a) Blue vitriol
- (b) Baking soda**
- (c) Washing soda
- (d) Gypsum

Baking soda:  $\text{NaHCO}_3$

Blue vitriol:  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

Washing soda:  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$  and

Gypsum:  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ .

So, baking soda does not contain water of crystallization.

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5. 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

Sodium carbonate is a basic salt as it is composed of a strong base Sodium hydroxide and weak acid Carbonic acid.

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6. Calcium phosphate is present in tooth enamel. Its nature is

- (a) basic
- (b) acidic
- (c) neutral
- (d) amphoteric

Calcium phosphate is basic salt since it is a source of weak phosphoric acid and a slightly stronger base of calcium hydroxide.

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7. 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

Sample solution turn pH paper yellowish-orange which confirms the acidic nature of the sample. To make the colour to greenish-blue, we have to add an antacid.



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8. Which of the following gives the correct increasing order of acidic strength?

- a) Water < Acetic acid < Hydrochloric acid
- (b) Water < Hydrochloric acid < Acetic acid
- (c) Acetic acid < Water < Hydrochloric acid
- (d) Hydrochloric acid < Water < Acetic acid

Water is neutral in its pure form, Acetic acid is an organic acid which is weak in nature and Hydrochloric acid is a strong acid.

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9. 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 hydrogencarbonate
- (c) After washing with plenty of water apply solution of sodium hydroxide on the hand
- (d) Neutralise the acid with a strong alkali

Wash the hand immediately with plenty of water to wash away most of the acid and then apply a paste of baking soda ( $\text{NaHCO}_3$ ) to neutralise the effect of any acid left.

A strong alkali cannot be used since it is as corrosive as a strong acid.

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10. Sodium hydrogencarbonate when added to acetic acid evolves a gas.

Which of the following statements are true about the gas evolved?

- (i) It turns lime water milky
- (ii) It extinguishes a burning splinter
- (iii) It dissolves in a solution of sodium hydroxide
- (iv) It has a pungent odour

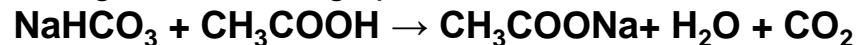
(a) (i) and (ii)

(b) (i), (ii) and (iii)

(c) (ii), (iii) and (iv)

(d) (i) and (iv)

Reaction between Sodium hydrogen carbonate and acetic acid leads to the evolution of carbon-dioxide gas.  $\text{CO}_2$  turns the lime water milky and extinguish a burning splinter.



# Thanks!

**Any questions?**

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