

Class 10 Chemistry Chapter 2 Acids, Bases and Salts MCQs

1. According to Robert Boyle, which of the following is not an acid's property?

- a) turns blue Litmus red
- b) sour in taste
- c) neutralize bases
- d) bitter in taste

Answer: d

Explanation: Acids are substances that have a sour taste, make blue Litmus red, liberate hydrogen with metals, conduct electricity in aqueous solution, and neutralise bases, according to Robert Boyle. They don't have a bitter flavour to them.

2. A proton donor is a chemical that

- a) protogenic
- b) protophilic
- c) amphoteric
- d) amphiprotic

Answer: a

Explanation: According to the bronsted idea of acids and bases, a proton donor acid is proton genic, a protophilic base is protophilic, and an amphoteric molecule is both base and acid.

3. Which of the following compounds can't be used as an acid and a base at the same time?

- a) amphoteric substance
- b) amphiprotic substance
- c) ampholyte

d) protophilic

Answer: d

Explanation: Amphoteric or amphiprotic substances, often known as ampholytes, are substances that may behave as both an acid and a base, such as water. With ammonia, it behaves as an acid, whereas with acetic acid, it works as a basic.

4. Lewis concept does explain the behaviour of _____

a) bases

b) salts

c) protonic acids

d) amphoteric substances

Answer: c

Explanation: One of the Lewis concept's fundamental flaws is that it doesn't explain how protonic acids like hydrochloric acid, sulphuric acid, and nitric acid behave. It also doesn't forecast the magnitude of acid and base relative strength.

5. Which of the following is a Lewis acid and which of the following is not a Lewis acid?

a) aluminium chloride

b) sodium ion

c) sulphur tetrafluoride

d) hydroxide ion

Answer: d

Explanation: Lewis acids are compounds like aluminium chloride that have an incomplete octet of central atoms, simple cations like sodium ion, and molecules like sulphur tetrafluoride that have a vacant d-orbital, but hydroxide ion is a negatively charged species. As a result, it isn't a Lewis acid.

6. The PH of which of the following is more than 7?

a) gastric juice

- b) vinegar
- c) blood plasma
- d) lemon juice

Answer: c

Explanation: Acids have a pH of less than 7, bases have a pH of greater than 7, while neutral chemicals have a pH of seven. Because gastric juice, vinegar, and lemon are acids, their pH is less than 7, but blood plasma is a base. It has a pH that is higher than 7.

7. What is the Neutralization process in reverse?

- a) formation
- b) hydrolysis
- c) reaction
- d) splitting

Answer: b

Explanation: Salts are powerful electrolytes that break down into ions when dissolved in water. Hydroxide ions supplied by water react with hydrogen ions to produce an acidic or basic solution. This is known as salt hydrolysis, and it is the opposite of neutralisation.

8. Acid strength increases in the order of _____

- a) $\text{HI} \ll \text{HCl} \ll \text{HBr} \ll \text{HF}$
- b) $\text{HF} \ll \text{HBr} \ll \text{HCl} \ll \text{HI}$
- c) $\text{HF} \ll \text{HCl} \ll \text{HBr} \ll \text{HI}$
- d) $\text{HCl} \ll \text{HF} \ll \text{HBr} \ll \text{HI}$

Answer: c

Explanation: The correct order of increase in acidic strength is $\text{HF} \ll \text{HCl} \ll \text{HBr} \ll \text{HI}$. $\text{HF} \ll \text{HCl} \ll \text{HBr} \ll \text{HI}$ is the correct order of increasing acidic strength. Acid strength is influenced by a variety of things. As the acid strength grows, the strength of the hydrogen-acid bond weakens.

9. Amphoteric molecules include which of the following?

- a) Acetic acid
- b) Malic acid
- c) Sugars
- d) Water

Answer: d

Explanation: Water is an amphoteric molecule because it can act as both an acid and a basic. It can take a proton and thus serve as a base, as well as donate a proton and thus act as an acid.

10. Which sort of acid is CH_3OH ?

- a) Bronsted acid
- b) Lewis acid
- c) Arrhenius acid
- d) Lewis and Arrhenius acid

Answer: a

Explanation: Alcohols are extremely weak Bronsted acids, with pK_a values ranging from 15 to 20. Proton transfer is the most crucial reaction to consider with nucleophiles since the hydroxyl proton is the most electrophilic site.