

**DELHI PUBLIC SCHOOL JAMMU**

**SESSION - 2025-26**

**MONTH - MAY**

**ASSIGNMENT**

**CLASS - X**

**SUBJECT - CHEMISTRY**

**1. Which of the following is a characteristic property of a base?**

**1**

- A. Sour taste
- B. Turns blue litmus red
- C. Slippery feel
- D. Reacts with metals to produce hydrogen gas

**Following question consists of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:**

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

**2. Assertion (A): Acids turn blue litmus paper red.**

**1**

**Reason (R): Acids increase the concentration of hydroxide ions ( $\text{OH}^-$ ) in solution.**

**3. What is the colour of phenolphthalein in acid and base?**

**1**

**4. What is the use of methyl orange as an indicator?**

**1**

**5. Differentiate between strong and weak acids with the help of one example of each. Also explain how their strength affects their electrical conductivity.**

**3**

**6. Describe the physical properties of acids and bases. Give suitable examples for each property.**

**5**

**7. Read the following passage and answer the questions:**

Acids are chemical substances that release hydrogen ions ( $\text{H}^+$ ) in aqueous solutions. They can be classified as **strong acids** and **weak acids** based on their degree of ionization in water. A **strong acid** completely ionizes in water, producing a high concentration of  $\text{H}^+$  ions. Examples include hydrochloric acid ( $\text{HCl}$ ), sulfuric acid ( $\text{H}_2\text{SO}_4$ ), and nitric acid ( $\text{HNO}_3$ ).

In contrast, a **weak acid** only partially ionizes in water, resulting in fewer free hydrogen ions. Common weak acids include acetic acid ( $\text{CH}_3\text{COOH}$ ), citric acid, and carbonic acid ( $\text{H}_2\text{CO}_3$ ). The strength of an acid affects its **electrical conductivity**, **reaction rate**, and **pH value**. Strong acids have lower pH values (closer to 0), while weak acids have higher pH values (closer to 7). The degree of ionization also determines how well the acid conducts electricity — stronger acids being better conductors.

1. What is the main difference between strong acids and weak acids? 1
2. How does the strength of an acid affect its electrical conductivity? 1
3. Which acid will have a lower pH — acetic acid or hydrochloric acid? Why? 2

**OR**

Give one example each of a strong acid and a weak acid.