

**Answer Key Practice Question – Set 3**  
**Subject – Chemistry**  
**Class - X**

1. Study the following table and choose the correct option: (1)

	Salt	Parent acid	Parent Base	pH
(a)	Sodium Chloride	HCl	NaOH	4.6
(b)	Ammonium Chloride	HCl	NH <sub>4</sub> OH	7
(c)	Sodium Acetate	CH <sub>3</sub> COOH	NaOH	8.9
(d)	Ammonium Acetate	CH <sub>3</sub> COOH	NH <sub>4</sub> OH	10

Option (c)

(c)	Sodium Acetate	CH <sub>3</sub> COOH	NaOH	8.9
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2. Give Reason: (2)

- i) Plaster of Paris should be stored in moisture proof container.
- ii) Tooth decay starts when the pH of the mouth is lower than 5.5.

**Ans. i) In contact with water, Plaster of Paris changes to gypsum, thus losing its property.**



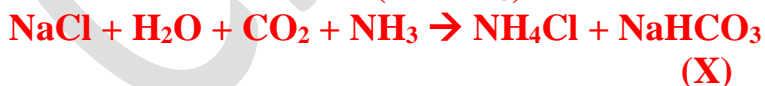
**ii) Bacteria present in mouth produce acid due to degradation of sugar and food particles, and the pH of mouth becomes lower than 5.5. The tooth enamel which is made up of calcium phosphate reacts with acid and thus gets corroded.**

3. Soda-acid fire extinguisher uses 'X' as one of its constituents. 'X' is produced using sodium chloride as one of the raw materials. 'X' on heating produces 'Y' which is used for removing permanent hardness of water. Identify 'X' and 'Y'. Also write the balanced chemical equations for the reactions involved. (3)

**Ans.**

**X – Sodium bicarbonate (NaHCO<sub>3</sub>)**

**Y – Sodium carbonate (Na<sub>2</sub>CO<sub>3</sub>)**



4. i) How is bleaching powder prepared from brine?
- ii) Write the relevant reactions.

iii) What is its use in textile industry?

(3)

**Ans. i) Chlorine is produced during electrolysis of brine (aqueous sodium chloride solution). By the action of this chlorine on dry slaked lime [Ca(OH)<sub>2</sub>], Bleaching powder (CaOCl<sub>2</sub>) is produced.**



**iii) Bleaching powder is used in textile industry for bleaching cotton and linen.**

5. i) What is a neutralisation reaction?

ii) What is Universal indicator?

iii) How is a pH paper made? What will be the colour of the pH paper when it is dipped in an aqueous solution of sodium chloride. (3)

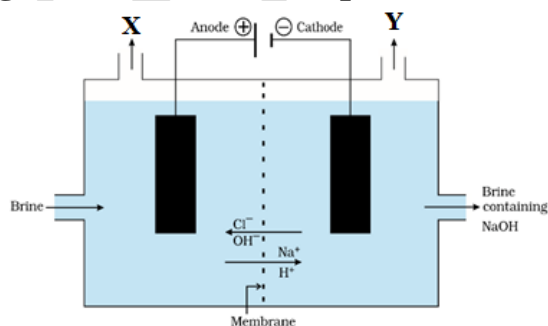
**Ans. i) When an acid and a base react to form a salt and water, and involves the combination of H<sup>+</sup> and OH<sup>-</sup> to generate this water is known as neutralisation reaction.**



**ii) A mixture of several indicators which shows different colours at different concentrations of H<sup>+</sup> ions in solution is known as universal indicator.**

**iii) A paper impregnated with the universal indicator is used as pH paper. The colour of pH paper will be light green.**

6. i) Following is the diagram for chlor alkali process.



(a) Identify X and Y.

(b) Why is this process called chlor alkali process?

ii) Identify the following from the given statement and write its chemical formula:

A blue crystalline salt when heated in a test tube it turns white, again when moistened with water, it turns blue. (3)

**Ans. i) (a) X – Chlorine gas      Y – Hydrogen gas**

**(b) As the products obtained in this process are two important chemicals, namely chlorine gas and sodium hydroxide, an alkali, the process is named as chlor alkali process.**

**ii) Copper sulphate crystals or hydrated copper sulphate  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$**

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