

1. Explain

- You have two solutions, A and B. The pH of solution A is 6 and pH of solution B is 8. Which solution has more hydrogen ion concentration? Which of this is acidic and which one is basic?
- Do basic solutions also have $H^+(aq)$ ions? If yes, then why are these basic?
- 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)?

2. Answer in brief

- What is the common name of the compound $CaOCl_2$?
- Name the sodium compound which is used for softening hard water.
- What will happen if a solution of sodium hydrocarbonate is heated? Give the equation of the reaction involved.
- Write an equation to show the reaction between Plaster of Paris and water.

3. Answer the following -

- Five solutions A, B, C, D and E when tested with universal indicator showed pH as 4, 1, 11, 7 and 9, respectively. Which solution is

- neutral?
- Strongly alkaline?
- Strongly acidic?
- Weakly acidic?
- Weakly alkaline?

- Equal lengths of magnesium ribbons are taken in test tubes A and B. Hydrochloric acid (HCl) is added to test tube A, while acetic acid (CH_3COOH) is added to test tube B. Amount and concentration taken for both the acids are same. In which test tube will the fizzing occur more vigorously and why?

4. Balance the following chemical equations.

- $HNO_3 + Ca(OH)_2 \rightarrow Ca(NO_3)_2 + H_2O$
- $NaOH + H_2SO_4 \rightarrow Na_2SO_4 + H_2O$
- $NaCl + AgNO_3 \rightarrow AgCl + NaNO_3$
- $BaCl_2 + H_2SO_4 \rightarrow BaSO_4 + HCl$

5. Long Answer

- Why is respiration considered to be an exothermic reaction?
- Why are decomposition reactions called the opposite of Combination reactions? Write equations for decomposition reactions.
- Explain redox reaction with example.
- Define (i) corrosion (ii) rancidity