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Question 1:
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?

Answer 1:
A pH value of less than 7 indicates an acidic solution, while greater than 7 indicates a basic solution. Therefore, the solution with pH = 6 is acidic and has more hydrogen ion concentration than the solution of pH = 8 which is basic.

Question 2:
What effect does the concentration of $H^+(aq)$ ions have on the nature of the solution?

Answer 2:
Concentration of $H^+(aq)$ can have a varied effect on the nature of the solution. With an increase in H+ ion concentration, the solution becomes more acidic, while a decrease of H+ ion causes an increase in the basicity of the solution.

Question 3:
Do basic solutions also have $H^+(aq)$ ions? If yes, then why are these basic?

Answer 3:
Yes, basic solution also has $H^+(aq)$ ions. However, their concentration is less as compared to the concentration of OH^- ions that makes the solution basic.

Question 4:
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)?

Answer 4:
If the soil is acidic and improper for cultivation, then to increase the basicity of soil, the farmer would treat the soil with quick lime or slaked lime or chalk.