

Chemistry Practical Class 11 Determination of pH of some solutions obtained from fruit juices, solutions of known and varied concentrations of acids, bases and salts using pH paper or universal indicator Viva Questions with Answers

Q1. What is pH?

Answer: pH is the abbreviation of the potential of hydrogen ions. It is a scale used to determine the solution's hydrogen ion (H^+) concentration. It is equivalent to the negative log of hydrogen ion (H^+) concentration.

$$pH = -\log [H^+]$$

Q2. What is pOH?

Answer: pOH is the abbreviation of the potential of hydroxide ion. It is a scale used to determine the solution's hydroxide ion (OH^-) concentration. It is equivalent to the negative log of hydroxide ion (OH^-) concentration.

$$pOH = -\log [OH^-]$$

Q3. What is the pH of pure water at $25^\circ C$?

Answer: The pH of pure water at $25^\circ C$ is equal to 7.

Q4. Are pH and pOH the same?

Answer: No, pH and pOH are not the same. Regardless, they were found to be related. pH is inversely proportional to pOH, i.e. pH increases with decreasing pOH.

$$pH \propto 1 / pOH$$

Q5. What is the pH of the acidic solution?

Answer: The pH of the acidic solution is less than 7.

Q6. What is the pH of distilled water?

Answer: Distilled water is a neutral solution. Thus its pH value is equal to 7.

Q7. Which has a lower pH value – apple juice or lemon juice?

Answer: A lemon juice is more acidic than apple juice. Thus it has lesser pH than apple juice.

Q8. What is the value of an ionic water product at 298 K?

Answer: The value of an ionic water product at 298 K is equal to $1.0 \times 10^{-14} \text{ mol}^2 \text{ L}^{-2}$.

Q9. If any two acidic solutions are mixed, what would happen to the pH of the mixture?

Answer: If two acidic solutions are integrated, then the pH of the solution would be in between the pH of the two solutions.

Q10. What is the relationship between pH and pOH of an aqueous solution?

Answer: pH and pOH are associated. The sum of pH and pOH is equal to 14.

$$\text{pH} + \text{pOH} = 14$$

Q11. What is a universal indicator?

Answer: A universal indicator is a mixture of pH indicator solutions that gives different colours at different pH values of the entire scale.

Q12. Is the pH of pure water affected by a temperature rise?

Answer: Yes, the pH of pure water is affected by a temperature rise. There is a slight decrease in the pH value because the degree of dissociation of water increases on increasing the temperature, thus the concentration of hydronium ions increases. Thus solution will become more alkaline.

Q13. What is the effect of dilution on the pH of

- (a) An acidic solution
- (b) A basic solution

Answer: The effect of dilution on the pH of

- (a) pH of an acidic solution increases on dilution
- (b) pH of a basic solution decreases on dilution

Q14. What is the pH of an alkaline solution?

Answer: The pH of an alkaline solution is more than 7.

Q15. What is the pH of a neutral solution?

Answer: The pH of a neutral solution is equal to 7.