

## Chemistry - 11th Class Chemistry Short Questions Chapter 8 Preparation

Q1. Write two uses of buffer solution?

**Ans 1:**

- The pH of human blood is maintain at 7.35 with the help of buffers. A higher or lower value than this may prove fatal.
- Buffers are used in many industrial processes like electroplating, dyes etc.

Q2. Why we need buffer solution?

**Ans 1:** Buffers are the substances which resist the change in pH. Buffers are very important in many areas of chemistry. Buffers are needed in chemical analysis, pharmaceuticals, electroplating etc.

Q3. Define pH and pOH. Give its equation?

**Ans 1:** pH: The negative logarithm of  $H^+$  ions concentration is called pH.

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

pOH: The negative logarithm of  $OH^-$  ions concentration is called pOH.

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

Q4. Define buffer solution. Give an example of basic buffer?

**Ans 1:** Buffer Solution: The solution that resist in pH changes when small amount of an acid or base is added to it is called buffer solution. It is formed by mixing a weak base and its salt with strong acid. e.g.  $NH_4OH/NH_4Cl$

Q5. Why the equilibrium constant value has its units for some of the reversible reactions but has not units for some other reactions?

**Ans 1:**

Units of  $K_c$  depends upon the number of moles of reactions and products involved in the reaction.

1. If number of moles of reactant and products are same it has no unit.
2. If number of moles of reactants are different from products then  $K_c$  has units, related to the concentration or pressure.

Q6. What will be nature of solution when (s) pH is more than 7 (b) pH is smaller than 7?

**Ans 1:** pH scale generally ranges from 0 to 14. When pH is less than 7 the solution has acidic nature. When pH is greater than 7 then solution is base.

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Q7. A mixture of  $\text{NH}_4\text{OH}$  and  $\text{NH}_4\text{Cl}$  gives a basic buffer. Justify the statement ?

**Ans 1:** A buffer which consists of a weak base and its salt with strong acid is called basic buffer. Since  $\text{NH}_4\text{OH}$  is a weak base and  $\text{NH}_4\text{Cl}$  is its salt with strong acid. Therefore it is basic buffer.

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Q8. What will be the nature of solution having pH equal to 12?

**Ans 1:** The value of pH varies between 0-14. A solution having pH value 0-7 are acidic in nature while a solution having pH value 7-14 are basic in nature.  
pH=12, This solution is basic

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Q9. Solubility of glucose increase in water by heating. Give reason?

**Ans 1:** Formation of solution of glucose in  $\text{H}_2\text{O}$  is an endothermic process. The solution becomes cold. Therefore, according to Le-Chatelier's principle an increase in temperature will favour the formation of glucose solution. Thus by increasing temperature more quantity of glucose will dissolve in water.

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Q10. Why do rates of forward reactions slow down the reversible reaction approaches the equilibrium stage?

**Ans 1:** The rate of forward reaction is directly proportional to molar conc. of reactants. Near the equilibrium stage, the concentration of reactant becomes small. Therefore the rate of forward reaction slows down due to decrease in concentration.

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