

Chemistry - 11th Class Chemistry Short Questions Chapter 8 Preparation

Q1.

Give the physical significance of K_f and K_b ?

Ans 1:

The rate of forward and reverse reaction tell us the condition on which a reaction will depend. It also tells about:

1. Direction of reaction
2. Extent of reaction.

Q2. Explain the terms buffer and buffer capacity?

Ans 1: Buffer: The solution which resist the change in pH by the addition of small amount of an acid or base is called buffer.
Buffer Capacity: The capacity of a buffer to maintain definite pH is called buffer capacity.

Q3.

A catalyst does not affect the equilibrium position and K_c of a reversible reaction. Explain ?

Ans 1:

In most of the reversible reactions, the equilibrium is not always reached within a suitable short time. So an appropriate catalyst is added. A catalyst does not effect the equilibrium position of the reaction. It increases the rates of both forward and backward reactions and it reduces the time to attain the state of equilibrium. Actually a catalyst lowers the energy of activation of both forward and reverse steps by giving new path to the reaction.

Q4. Reversible reaction attains the position of equilibrium which is dynamic in nature and not static.Explain it?

Ans 1: At Equilibrium state the reaction is not stopped.Only the rate of forward reaction become equal to reverse reaction.Since reaction is in progress in both the direction. Therefore equilibrium is dynamic in nature not static.

Q5. Explain the term reversible reaction and state of equilibrium?

Ans 1: State of Equilibrium: The state of reversible reaction in which rate of forward reaction becomes equal to rate of reverse reaction is called chemical equilibrium.There are two types:Static EquilibriumDynamic Equilibrium

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.

Q7. The change of temperature disturbs both the equilibrium position and equilibrium constant of a reaction. Explain with reason?

Ans 1: According to Le-Chatelier's principle an increase in temperature will favour the endothermic reaction and decrease in temperature will favour the exothermic reaction. Therefore change of temperature will disturb equilibrium position. The Equilibrium constant is temperature dependent therefore with the change of temperature a new equilibrium position will be established.

Q8. What are Buffer Solutions? How Acidic Buffers are prepared?

Ans 1: Those solutions, which resist the change in their pH when a small amount of an acid or a base is added to them, are called buffer solutions. They have specific constant value of pH and their pH values do not change on dilution and on keeping for a long time. Acidic buffer is prepared by mixing a weak acid and a salt of it with a strong base. Such solutions give acidic buffers with pH less than 7. Mixture of acetic acid and sodium acetate is one of the best examples of such a buffer.

Q9. Define buffer solution. Give an example of basic buffer?

Ans 1: Buffer Solution: The solution that resists pH changes when a small amount of an acid or base is added to it is called a buffer solution. It is formed by mixing a weak base and its salt with a strong acid. e.g. $\text{NH}_4\text{OH}/\text{NH}_4\text{Cl}$

Q10. Define pH and pOH. Give its equation?

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

$$\text{pH} = -\text{LOG}[\text{H}^+]$$

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

$$\text{pOH} = -\log [\text{OH}^-]$$
