

Chapter: 17 (Reversible Reaction)**T.B Question 1. Copy and Complete.**

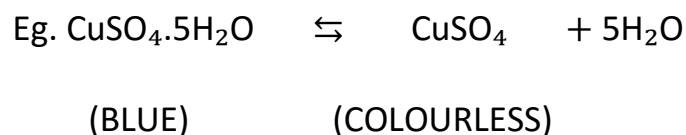
Reactions which can go forwards or backwards are called **reversible reaction**. An **equilibrium** mixture contains constant amounts of reactants and products in a closed system. When the rate of the forward reaction equals the rate of the reverse reaction, we call it **dynamic** equilibrium.

We can change the position of equilibrium by altering concentrations or **temperature** (Pressure affects equilibria if there is an imbalance of **gas** molecules in the equation.)

A **catalyst** does not affect the position of equilibrium, but equilibrium is reached more **quickly** .

Question / Answer:**Q.1. What are reversible reactions?**

Ans. The reactions which can go both in forward and backward directions are called reversible reactions.



Q.2. What is dynamic equilibrium?

Ans. When the forward and backward reactions are going at the same rate, it is called dynamic equilibrium.

Q.3. Name the factors that affect the rate of equilibrium and briefly explain.

Ans. i) Changing Concentration- Increasing the concentration will make the forward reaction go faster until it reaches equilibrium again.

ii) Changing Temperature- Increasing the temperature will shift the position of equilibrium to reduce it.

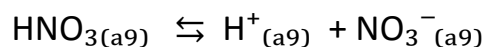
iii) Changing the pressure- Changing the pressure can also affect the mixture at equilibrium. So, if we increase the pressure the equilibrium shifts to try to reduce it.

Q.4. What can you say about energy change in a reversible reaction?

Ans. The energy absorbed in the forward reaction is the same as energy given out in reverse reaction.

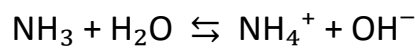
Q.5. Define acids in terms of protons.

Ans. We can define acids as proton donors.



Q.6. Define base in terms of protons.

Ans. We can define base as proton acceptors.

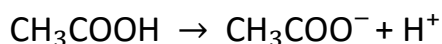


Q.7. What are strong acids and weak acids? Give examples.

Ans. Acids which give out more H⁺ ions or are dissociated completely are called strong acids.



Acids which give out less H⁺ ions or are not dissociated like strong acids or the H⁺ ions again join together, thus decreasing number of H⁺ ions.



Q.8. What are indicators? Give example.

Ans. Indicators are substances which are used to indicate whether the substance is acid or a base. It is also used to indicate the end of an acid base reaction.

Ex. Phenolphthalein, methyl orange.

T.B.Q.2. Hydrated copper sulfate made up of blue crystals.

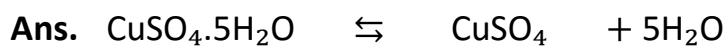
a) Explain what happens if you heat the blue crystals.

Ans. Hydrated copper sulfate loses the water which is bonded to its crystals and turns colorless.

b) How can you get hydrated copper sulfate back again?

Ans. By adding water or exposed it to humid air.

c) Write an equation showing this reversible reaction.



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