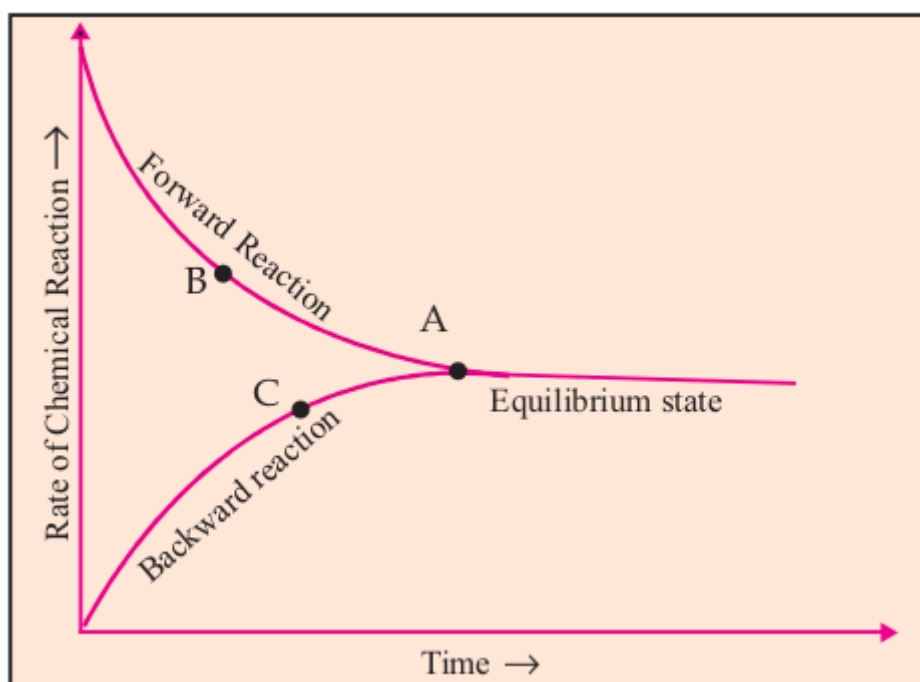# Chemistry- X- Unit -5. Class - 28

Compounds of Non – Metals

Chemical equilibrium

Consider the graph of a reversible reaction .

Time Is given in the X axis and rate of reaction in Y axis.

As time progresses forward reaction decreases .

Backward reaction increases.

At a particular point of time the rates of both forward and backward reactions become equal.

This stage is known as Chemical equilibrium.

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Characteristics of equilibrium

* At the equilibrium both the reactants and the products coexist.

* The rates of forward and backward reactions become equal at equilibrium.

* Chemical equilibrium is dynamic at the molecular level

*Chemical equilibrium is attained in closed systems.

Le Chateliers' Principle

When the concentration, pressure or temperature of a system at equilibrium is changed, the system will readjust itself so as to nullify the effect of that change and attain a new state of equilibrium.

This is known as Le Chateliers' Principle

Influence of concentration on Equilibrium

When the concentration of the reactant nitrogen is increased , According to Le Chateliers' principle, the system rearranges by converting the increased amount of reactant into products.

That is forward reaction increases.

When the concentration of the nitrogen is decreased , backward reaction increases .

Questions

1. Consider the following graph of reversible reaction and answer the following questions.
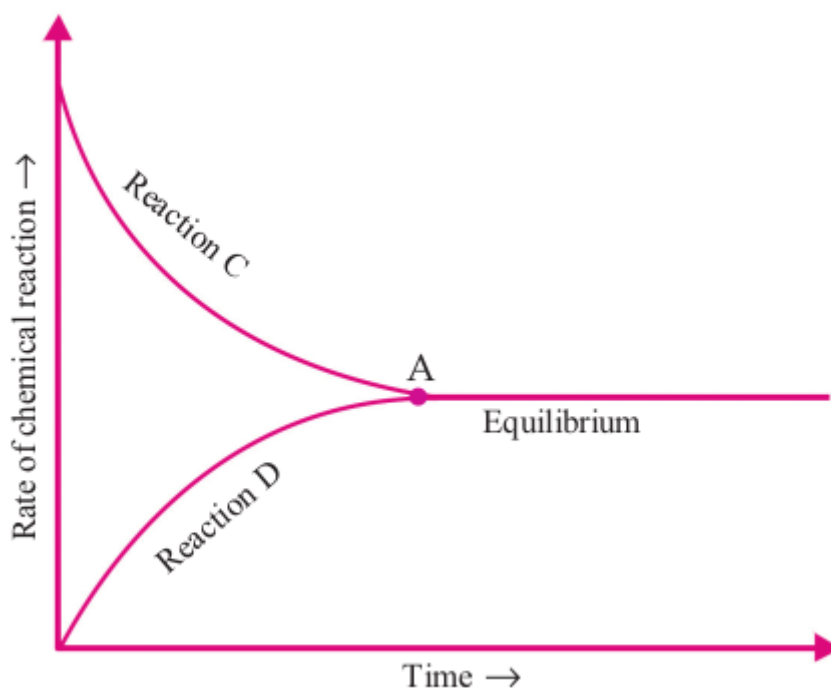
a) Identify and write reactions C and D.

b) Identify the point at which the rates of both forward and backward reactions become equal ?

2. Consider Haber process, the industrial production of Ammonia .

  a) What will be the effect, if the ammonia produced is removed continuously from the system ?

3 .Write any two characteristics of chemical equilibrium ?

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