## BIOLOGY

#### Class-X

# Life process MECHANISM OF PHOTOSYNTHESIS

# **MECHANISM OF PHOTOSYNTHESIS**

(i) **Light reaction:** It is also called as photochemical process.  $\upsilon$  It was discovered by 'Robert Hill' therefore it is also called as Hill's reaction

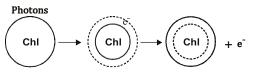
Site : Grana of chloroplast.

Raw materials : Light and water.

Regulation : This process is regulated by chlorophyll molecules.

## It consist of 3 steps:

(A) **Photo excitation of chlorophyll molecule**: During this process chlorophyll molecule receives sunlight in the form of small energy bundles called as photons and become excited to higher energy level.



1.

2. Photolysis of water: It is also called as photooxidation of water, this takes place in presence of Mn<sup>+2</sup> & Cl<sup>-</sup> ions.

 $4H_2O \longrightarrow 4H^+ + O_2 + 4e^- + 2H_2O$ 

 $O_2 \mbox{ is liberated as by product and } \mbox{H}^+ \mbox{ ions are used for reduction of }$ 

NADP2NADP +  $4H^+$   $\longrightarrow$  2NADPH<sub>2</sub>

**3. Photophosphorylation:** During this process ATP are produced. It takes place in quantasomes.

 $ADP \longrightarrow ATP,$  $ADP + iP \longrightarrow ATP.$