

Chapter 6

LIFE PROCESSES

Respiration is the process by which food is burnt in the cells of the body with the help of oxygen to release energy. It takes place in the mitochondria of the cells.

Def: it is the oxidation of food material in cells to release energy for various life processes.

- The energy released during respiration is used to make ATP molecules (Adenosine Tri Phosphate) from ADP molecules (Adenosine Di Phosphate) and inorganic phosphate.
- There are two main types of respiration. They are aerobic and anaerobic respiration.

Aerobic respiration, takes place in the presence of oxygen. It produces more energy.

In aerobic respiration glucose is converted into pyruvate in the cytoplasm in the presence of oxygen and then in the presence of oxygen, pyruvate is converted into carbon dioxide, water and energy in the mitochondria.

Anaerobic respiration:

1. Takes place in the absence of oxygen.

2. It produces less energy.
3. The end products are lactic acid or ethanol, carbon dioxide, and energy.
4. It takes place in muscle cells and yeast.

In anaerobic respiration in muscle cells, glucose is converted into pyruvate and in the absence of oxygen pyruvate converted into lactic acid and energy.

Breakdown of glucose by various pathways :-

