

## INTRODUCTION TO METABOLISM

**Metabolism** is a biochemical process that allows an organism to live, grow, reproduce, heal, and adapt to its environment. A **metabolic pathway** (or metabolic map) constitutes a series of enzymatic reactions to produce specific products. The term **metabolite** is applied to a substrate or an intermediate or a product in the metabolic reactions.

### Types of metabolic reactions

The biochemical reactions are mainly of four types:-

1. Oxidation-reduction.
2. Group transfer.
3. Rearrangement and isomerization
4. Make and break of carbon-carbon bonds. These reactions are catalysed by specific enzymes.

**Metabolism is broadly divided into two categories (Fig.1.1).**

1. **Catabolism** : The **degradative processes** concerned with the breakdown of complex molecules to simpler ones, with a concomitant release of energy.
2. **Anabolism** : The **biosynthetic reactions** involving the formation of complex molecules from simple precursors.

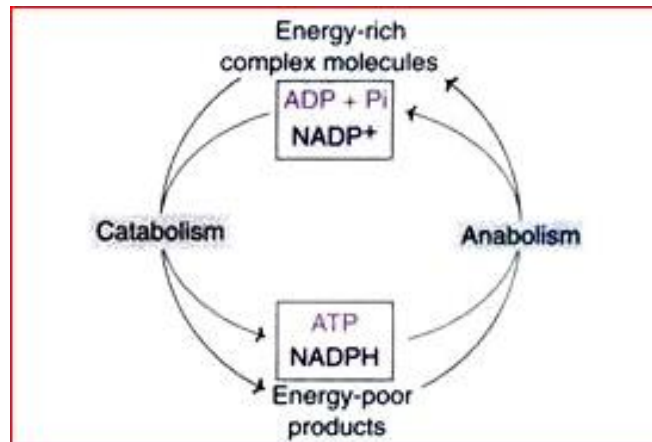
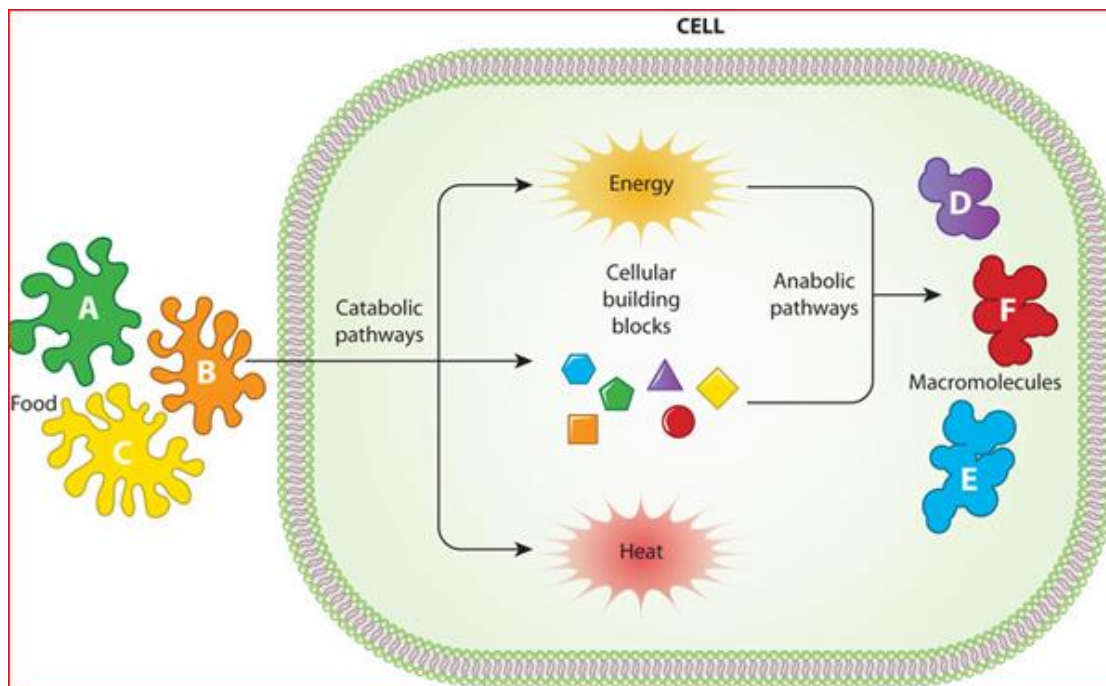


Fig. 1.1 : An outline of catabolism and anabolism



## Catabolism

The main purpose of catabolism is to trap the energy of the biomolecules in the form of ATP and to generate the substances (precursors required for the synthesis of complex molecules).