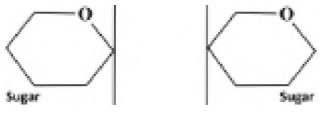
BIOMOLECULES

- Chemicals or molecules present In the Living organism are known as blomolecules. Bio mincites are divided into two types· inor.ganic and organic_
- Inorganic biomolecules includes minerals, gases arid water arid organic biomolecules includes carbohydrates, fats, proteins, nucleic acids, vitamins etc.
- Proteins are polymers of amino acids.
- In nucleic acids,. the phosphate molecules links C of sugar acme nucleoside to the C of sugar of next nucleosides releasing two water molecules to form 3'',5r bhosphocliester bond.
- in polysaccharides, the mono-saccharlde are linked by slyccisiclic bonds formed hiv dehydration between two carbon atoms of two adjacent monosaccharaides.



Ca rb-a hyd rates (Polysaccharides)

- Polysaccharides are long chain of sugar containing different monosaccharaides as a building block.
- Starch i5 present in plants as More house of energy in plants- It forms helical secondary structure to hold the 12 molecules.
- Cellulose mileculas contain glucose molecules joined together by 1·4 13 I ihka.ge. It is the most abundant organic molecules on earth.
- Glycogen is called animal starch as it Is the reserve food materials for animals, bacteria and fungi. GluccIr molecules are ArrAngErl irr highly: branched bush like chain having two types of linkage 1-4 din, straight *irk and 1-5 I inkas.e in branching.

Proteins

These are polypepticle chains made up of amino acids, There are 20 types of amino acids joined together by peplicle bond between amino and carboxylic group. There are two kinds of amino acids.

{a). Essential amino acids are obtained by I iving organism along with food.

Mon•esserrtial amino acids can be prepared by our body from raw materials_

Collagen is the most abundant protein in animal world.
Primary structure of protein is the basic structure of protein in which a number of p olypeptides are involved having sequence of amino acids.
SecorKlary structure protein threads forms helix. There are three types of secondary structure - a helix, 11. pleated and collagen.
In Tertiary structure long protein chain is folded upon itself like a hollow woolen ball to .give three dimensional view of proteins.
In Quaternary structure each polypeptide develops its own tertiary structure and function as subunit of protei n_ Eg. Hemoglobin.
Nucleic Acid

Nucleic acids are polynucleotides. A nucleic acid has three chemically distinct components heterocyclic compound {nitrogenous base)„ polysaccharides l ribose/ deoxy ribose sugar) and phosphate or phosphoric acid_ There are two kinds of nitrogenous bases - pu rifles and pyrirnid lnes.
Purines: Adenine and Gua nine
Nerimidines1Cytosine,Thyrnine and Uracii,
The sugar found in nucleic acid is either ribose or deoryribose.
N ucleic add containing lJeop,rribose sugar Is called DNA (Deowribonucleic Acid) and those containing ribose sugars are called RNA IlRikenucleic acid).

Metabolic Bash for liwirig organism: The metabolic pathways that lead to more complex structure from simpler structure are called biosynthetic or anabolic pathways and those pathways that lead to simpler structure from complex structure are called catabolic pathways.

Enalmies

- Enzymes are commonly pnoteinaceous substances which a re capable of catalyzing chemical reactions of biological °psi n without themselves undergoing any change, commonly called as bia.cata Pots.
  The nucleic acids that behave like enzymes are called rihozymes.
- a The major difference between inorganic and organic catalyst is inorganic catalyst works effectiyely at high temperature and pressure but enzyme get damaged at high temperature.
- The external energy. required to stall chemical reaction Is called activation energy_

Factors influencing E nzyme activity
(a). Temperature
(b1 - PI'l
(cli Concentration of Substrate

Competitive inhibitor. When the molecular structure of inhibitor resembles the substrate that inhibits the bimetal gf enzymes.

- Erkzyrnes are classified as
  - Oxidoreductasesniehydrogenases
  - o Transferases
  - Herd r011erSeS
  - o Lyases
  - o ISOrh@ratel
    Llgases

Co-factors are the PI on-proteln constituent clan enzyme to make the enzyme catalytically more active.. Thee pot portions of enzyme are called a poenrymes_

There are two types of cofactors: Coenzymes Prosthetic groups.

The essential chemical components of any coenzymes are vilmm ins. As [illegible] Niacin.