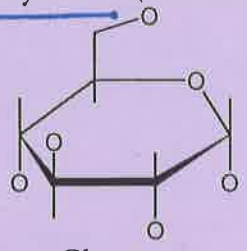
Macromolecules of Living Things

	Carbohydrates	Lipids	Proteins	Nucleic Acids
Elements	C, H, & O	C, H, O	C, H, O, N	C, H, N, O, P
(Subunits) Monomers	monosaccharides	glycerol + fatty acids	Amino acids	nucleotides
Function	store + release energy, structural, support + protection	Make up the cell membrane and storage of energy	controls rate of reactions, transport, regulate cell processes	store & transmit genetic information
Examples	sugar, starch, cellulose	fats, oils, + waxes	muscle, enzymes, hair, hemoglobin	DNA and RNA

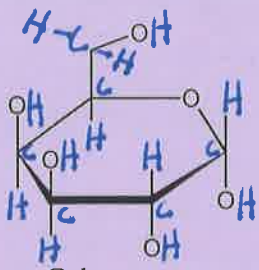
Biological Molecules or Macromolecules of Living Things

Model 1 – Molecules of Life

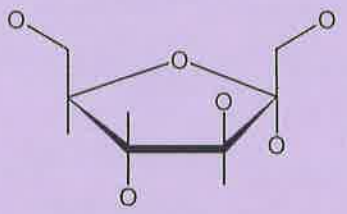
Carbohydrates (monosaccharides)



Glucose

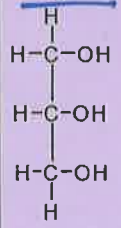


Galactose

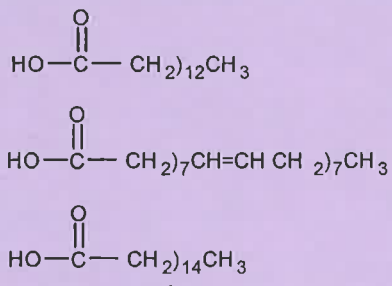


Fructose

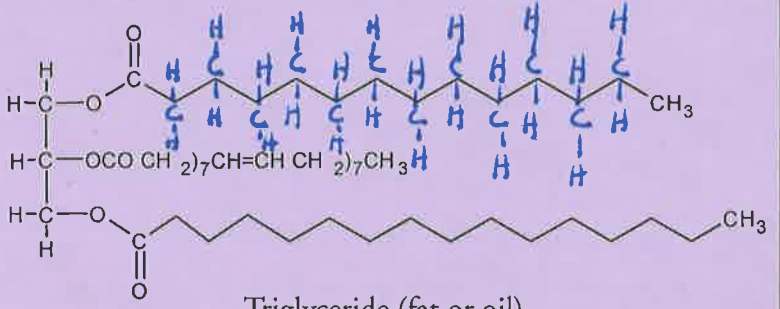
Lipids



Glycerol

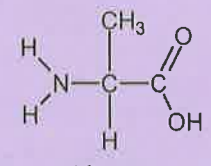


Fatty acids

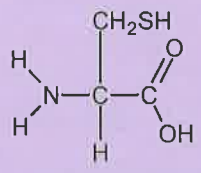


Triglyceride (fat or oil)

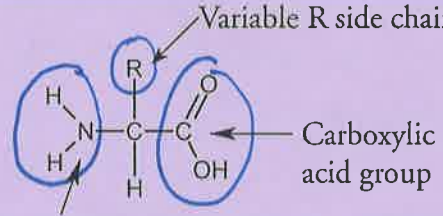
Proteins (amino acids)



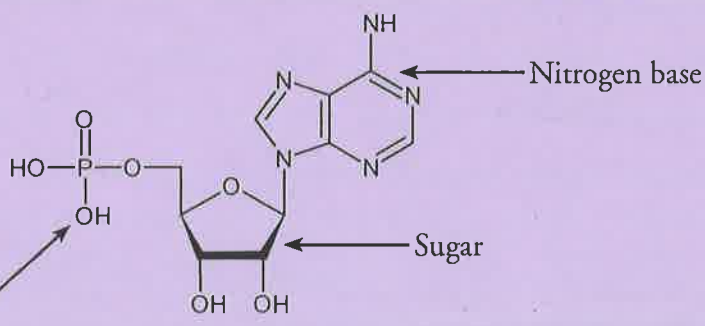
Alanine



Cysteine



Nucleic acids (nucleotides)



Key Concepts: Carbon Compounds

Carbon - can bond with many elements - including H, O, P, S, N - to form compounds with many different chemical properties.

Carbohydrates - Organisms use carbohydrates to store and release energy, as well as for structural support and protection.

Lipids - can be used to store energy, and they form important parts of biological membranes and waterproof coverings.

Nucleic Acids - store and transmit hereditary, or genetic, information.

Proteins - function to control the rate of reactions and regulate cell processes. Other proteins form important cellular structures while others transport substances into or out of cells or help to fight diseases.