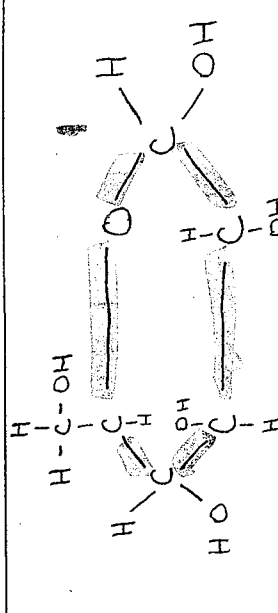
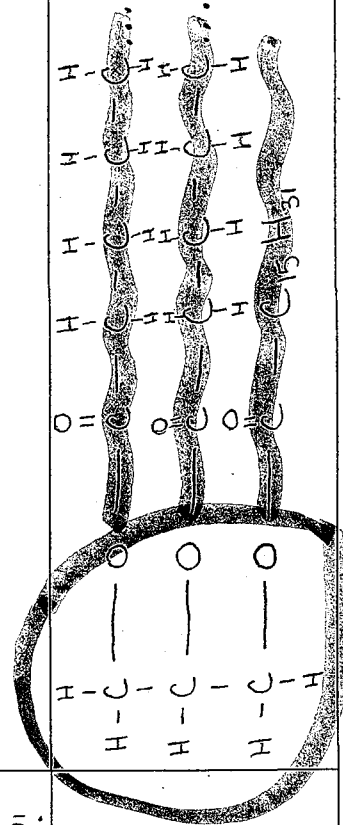


L12 Boniert
10-23-18

BIOCHEMISTRY - ORGANIC COMPOUNDS

Characteristics	Carbohydrates	Lipids
Elements	Carbon, hydrogen, oxygen	Carbon, hydrogen, oxygen
Ratio	H:O = 2:1	H:O = much greater than 2:1
Building Blocks (Monomers → Polymers)	Monosaccharides (simple sugar, glucose)	up to 3 fatty acids and 1 glycerol per lipid.
Functions	<ul style="list-style-type: none"> * Main source of ENERGY for living things ↓ * Also used for structural purposes (part of plant cell walls - (Cellulose)) 	<ul style="list-style-type: none"> * Used as a source of STORED ENERGY * Important parts of biological membranes. * Used in waterproof coverings.
Examples and Structure	<p>STARCH (a polysaccharide) like glycogen and cellulose.</p> <p>Glucose (a monosaccharide) $C_6H_{12}O_6$ * Most sugars end in "ose!"</p>	Fats, cholesterol, waxes, oils, and steroids (used as chemical messengers)
Structural Diagram		

Characteristics	Proteins	Nucleic Acids
Elements	C, H, O, N, ... Sulfur (sometimes)	C, H, O, N, Phosphorous
Ratio	None	NO ratio
Building Blocks (Monomers → Polymers)	amino acids - 20 different types.	nucleotide
Functions	<p>enzymes - regulate the rate of chemical reactions.</p> <p>Antibodies - destroys foreign invaders.</p> <p>Hormones - Chemical messengers that regulate processes such as growth + metabolism</p>	* stores and transmits hereditary material
Examples and Structure	<p>Hemoglobin - part of blood (red) cell, carries oxygen.</p> <p>peptide bond - holds amino acids together</p> <p>polypeptide - many amino acids.</p>	<p>DNA - deoxyribonucleic acid</p> <p>RNA - ribonucleic acid</p>
Structural Diagram	<p>amino group</p> <p>Carboxyl group</p>	<p>phosphate group 3</p> <p>Nitrogen base</p> <p>2 C</p> <p>3 C</p> <p>5 C</p>