

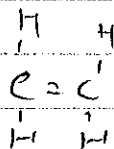
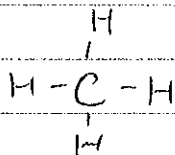
Bonding:

Ionic bonds: attraction b/w a (+) charged atom & (-) charged atom

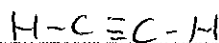
Covalent bonds: holding to same thing together (sharing e⁻)

Organic compounds: C-based molecules (C w/ O, H) NOT CO₂

Carbon - can form 4 covalent bonds
exceptional about C
- single, double, triple bonds



both C share
↓
each bond



Macromolecules

large, organic, biomolecules (biology-life based)

4 types: Carbohydrates

Lipids

Proteins

Nucleic Acids

Polymers = groups of smaller molecules called monomers

↓
Many

↓
Single

Carbohydrates

- Contain C, H, O
1 : 2 : 1 ratio

- Monomers - monosaccharides (simple sugars)

Ex



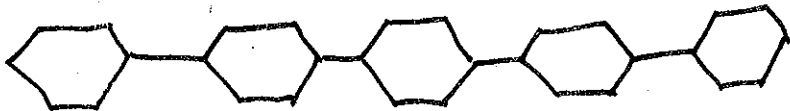
glucose



ribose

- Polymers - polysaccharides (complex carbs)

Ex. glycogen, cellulose



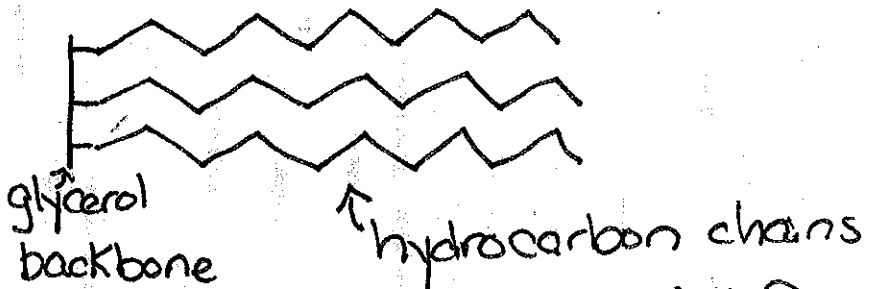
- Function - Energy source

- Short-term energy storage
(1-4 days)

excess glucose body will string together
to form glycogen to store until necessary

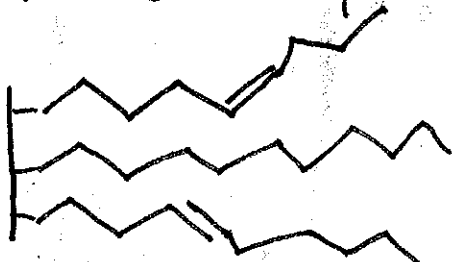
Lipids

- Contain C, H, O
- Forms - fats, waxes, oils, triglycerides
- Saturated - all single bonds in chains



- Pack tightly together - solid @ room temp. → do in arteries = bad

- Unsaturated - one or more double bonds in hydrocarbon chains



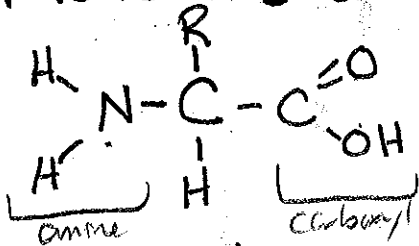
- Causing kinking of chain → can't pack so tightly, liquid @ room temp.

Function - long-term energy storage
major component to cell membranes

Proteins

- Contain C, H, O, N

- Monomers - amino acids



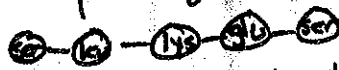
R = variable - different
for each amino acid
(20 in all)

Ex. Valine, Serine, lysine (essential)

- Polymers - proteins/polypeptides

- Levels of organization

1^o - Primary - sequence of a.a.



2^o - Secondary - β pleated sheet or α helix



3^o - Tertiary - 3D



4^o - Quaternary - 2 or more polypeptides

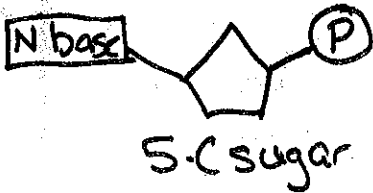


- Functions - control reactions (enzymes),
structure, transport, fight disease,
hormones, membrane gates/pumps

Nucleic Acids

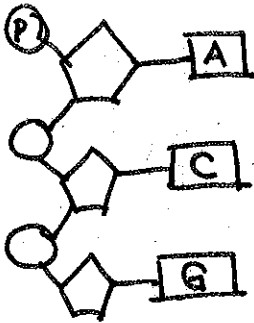
- Contain - C, H, O, N, P

- Monomer - nucleotides



Ex. A, T, G, C

- Polymers - DNA, RNA



- Functions: Store, transmit genetic information. Code (directions) for proteins