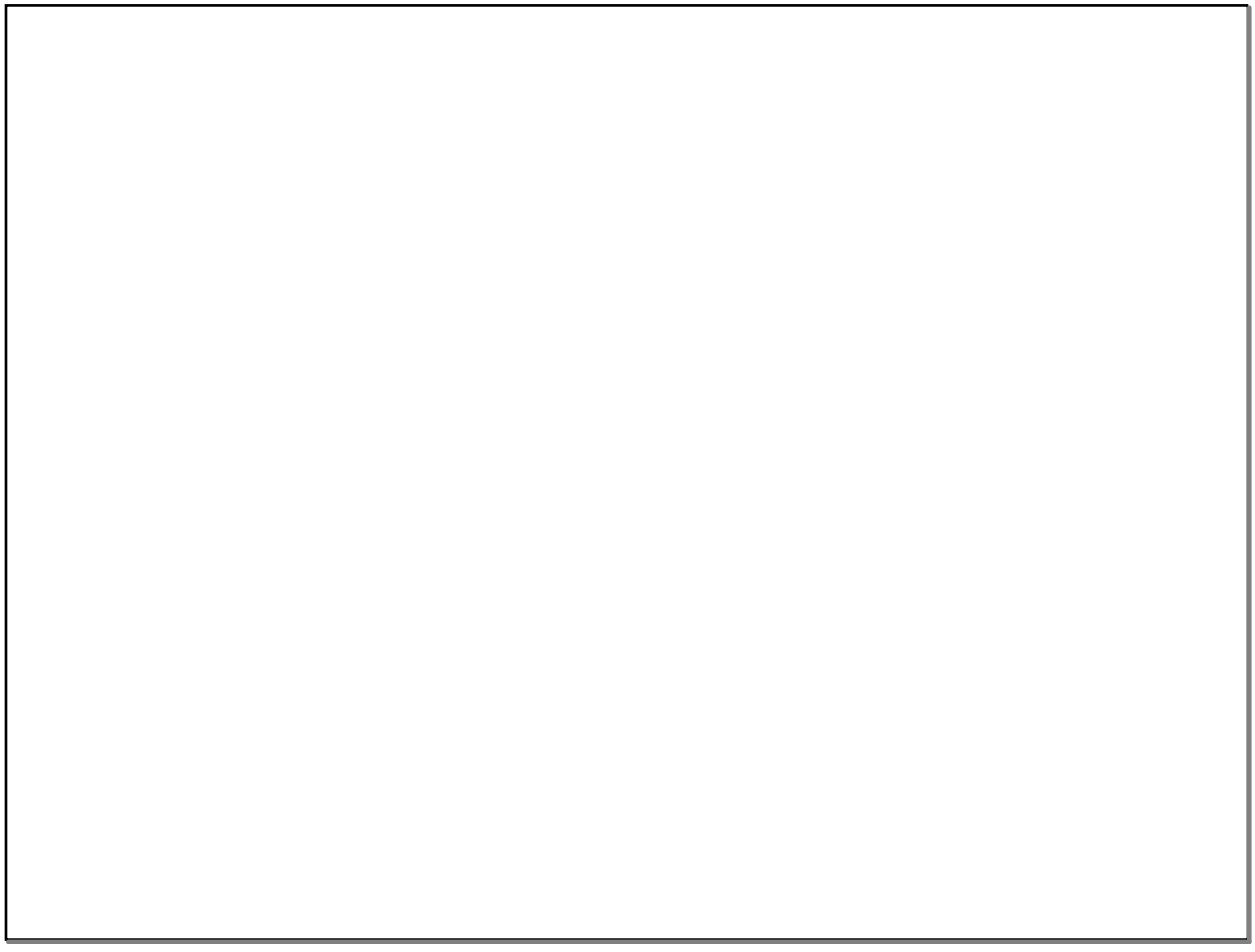
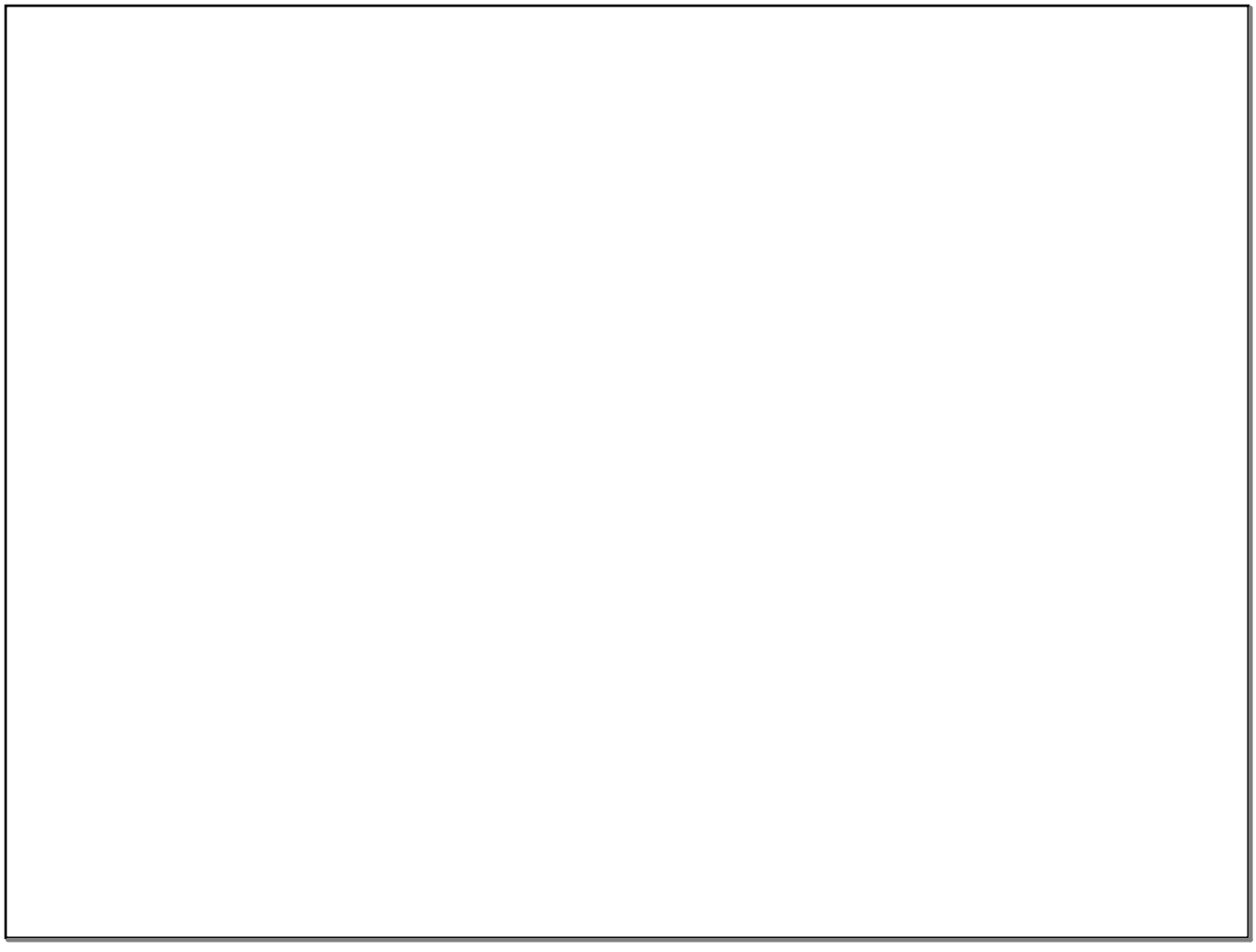
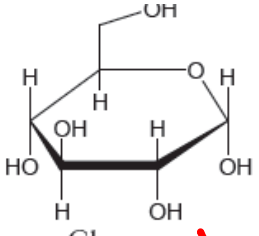
April 10, 2014

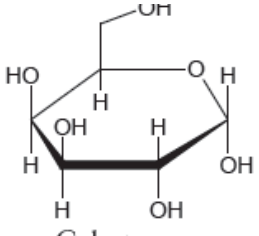


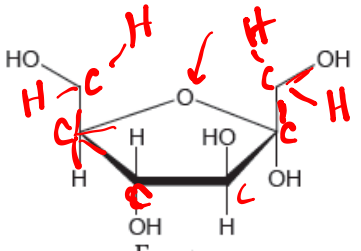
April 10, 2014



Carbohydrates — quick energy

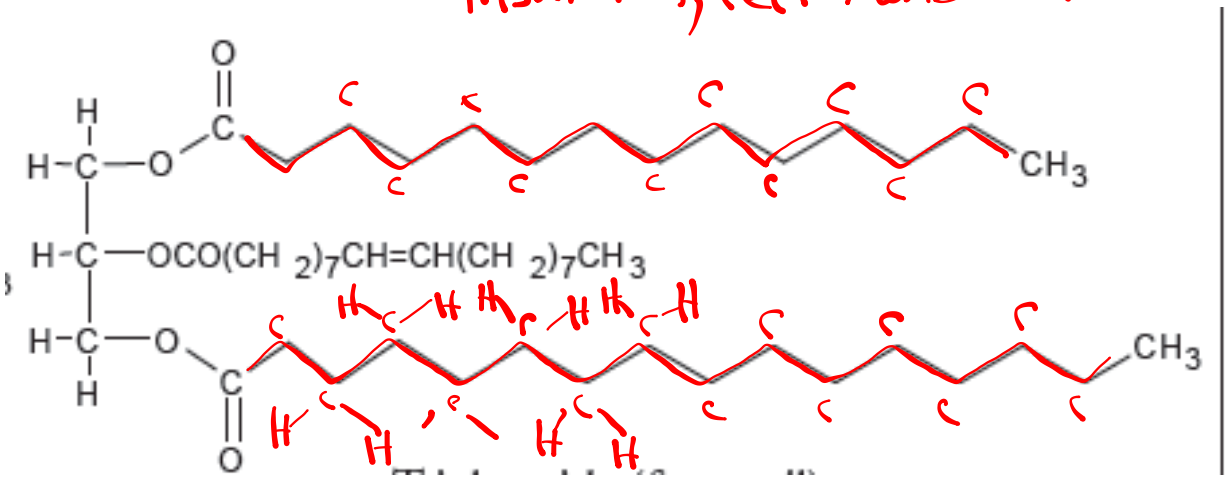

Glucose

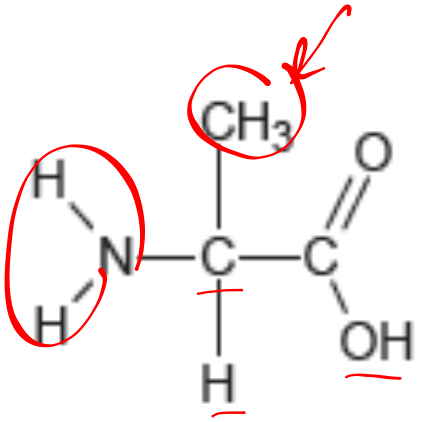

Galactose


Fructose

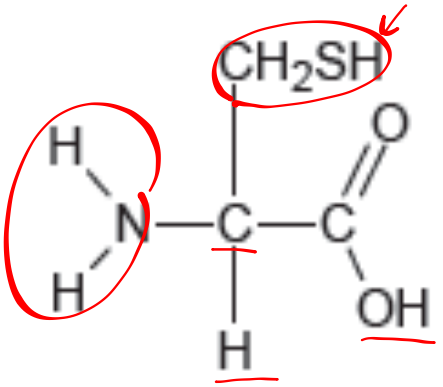
- monomers + monomer + + + + +
= polymer

Lipids — long-term energy storage
— insulation, cell membrane





Alanine



Cysteine

- Monomers = amino acids
- polymer = Protein → enzymes, etc. control chem RXNs.
  → structural
  etc. etc.

Nucleic acids

- DNA
- RNA

monomer = nucleotides

polymer

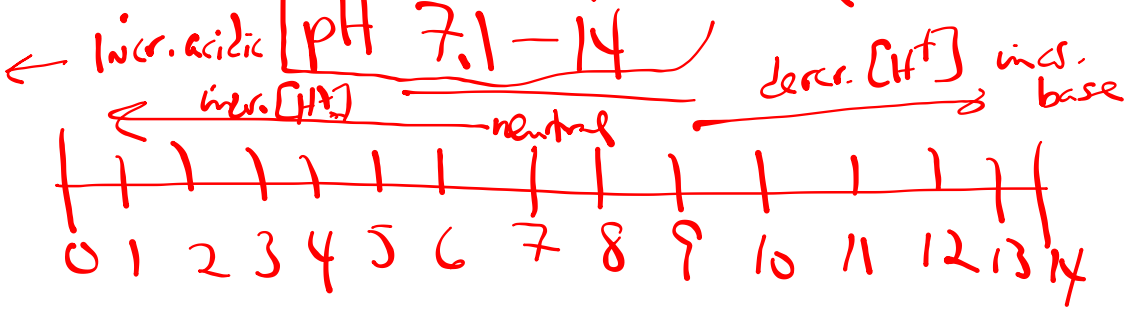
pH $-\log [H^+]$

– acid = $[H^+]$ in solution > pure H_2O

pH 0 – 6.9

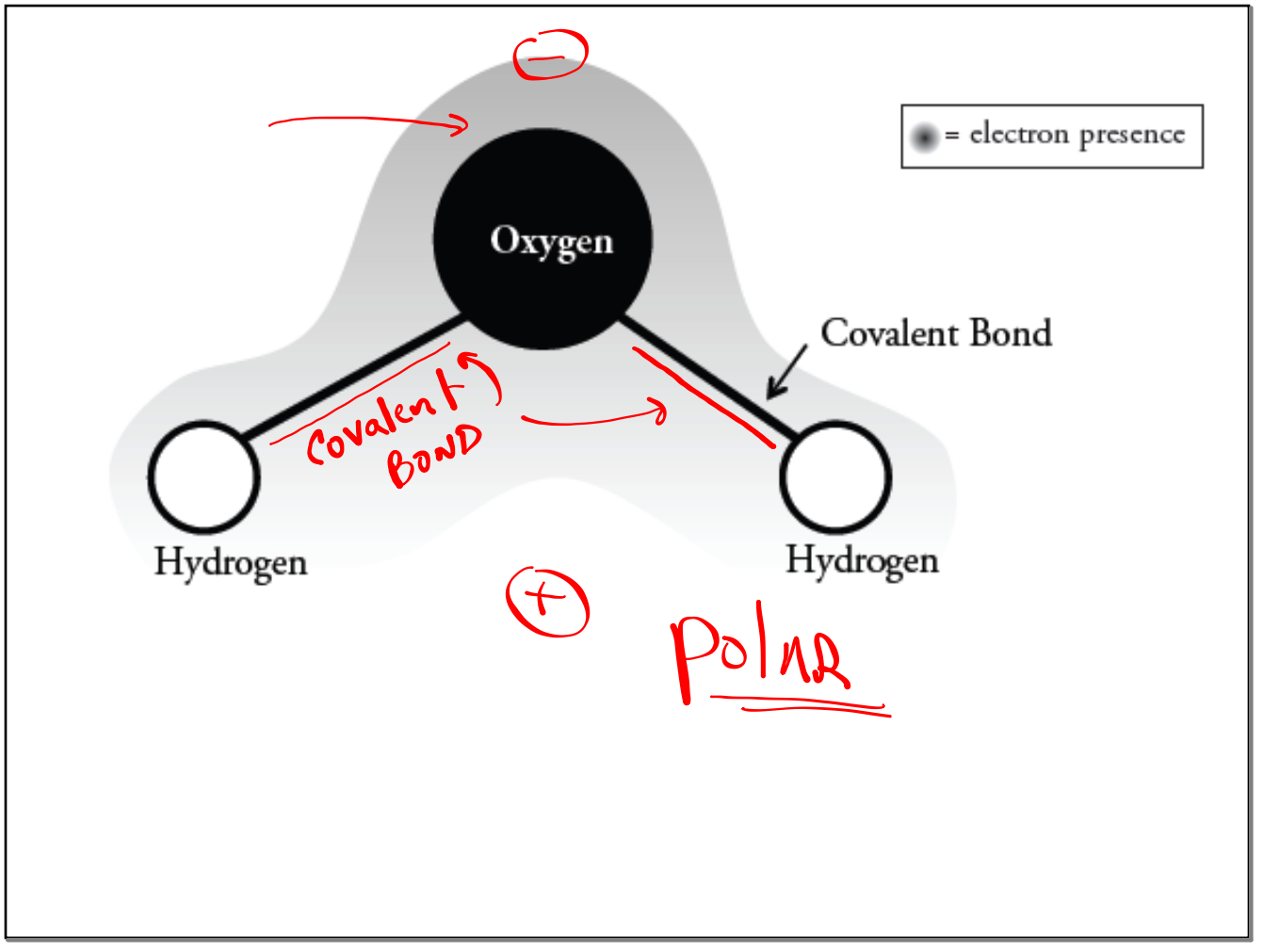
$[H^+]$ in pure H_2O = 7 neutral

– base – $[H^+]$ in solution < pure H_2O



Compare $[H^+]$ @ pH 8 to $[H^+]$ @ pH 11

1000X more $[H^+]$ @ pH 8 than pH 11.


= electron presence
Oxygen
Covalent Bond
Covalent Bond
Hydrogen
Hydrogen
POLAR

pH + enzyme function

- optimal range of pH

hydrophilic - form H bonds w/ H_2O

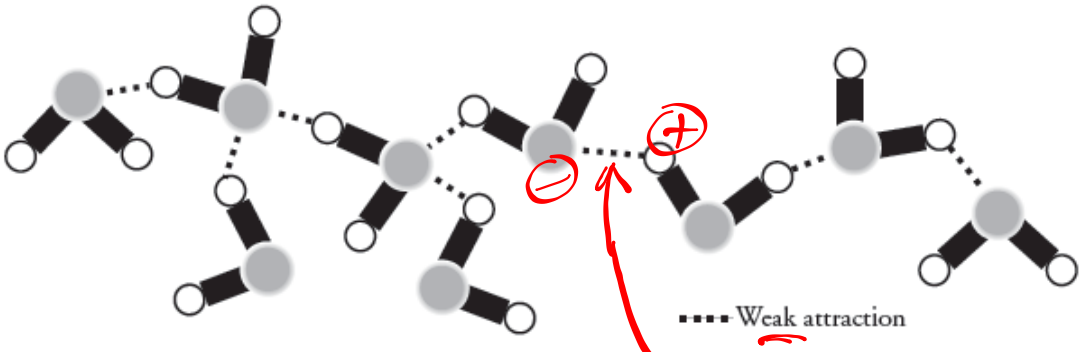
ex: NaCl dissolves in

polar

hydrophobic - doesn't form H bonds w/

ex: lipids

non-polar



hydrogen bond

- cohesion
- adhesion