

**POINTS OF EMPHASIS(POE) and Odds and Ends(OAE)**

**CH 3.1, 3.2, and 3.3**

1. Sugars normally end in the ending -ose
2. 6 carbon—hexose(i.e. glucose, fructose)  
5 carbon- pentose  
3 carbon- triose
3. Aldehydes- C=O is at end of carbon chain  
Ketones- C=O is in middle somewhere of carbon chain  
BOTH are in the CARBONYL GROUP
4. P<sub>i</sub> refers to INORGANIC PHOSPHATE(ie. ATP to ADP + P<sub>i</sub>)
5. Glucose consists of a CARBONYL GROUP and multiple HYDROXLS
6. The ionized form of -COOH is found in living cells; negative charge because it lost an H<sup>+</sup>
7. The ionized form of NH<sub>2</sub> is found in living cells; positive change because it picked up an H<sup>+</sup>
8. Because AMINES pick up an H<sup>+</sup> they are BASES: i.e. Nitrogenous base
9. Glucose forms RINGS in aqueous solution
10. Disaccharides are joined by GLYCOSIDIC LINKAGES(result of dehydration reactions)
11. In cellular respiration, the carbon skeletons of sugars can be incorporated into the synthesis of other organic molecules(i.e. amino acids)
12. Important Disaccharides: SUCROSE(a glucose + a fructose), LACTOSE, MALTOSE; all are bonded with 1-2 glycosidic linkages
13. THE STRUCTURE AND FUNCTION OF A POLYSACCHARIDE IS DETERMINED BY ITS SUGAR MONOMERS AND BY THE POSITION OF ITS GLYCOSIDIC LINKAGES
14. STARCH—a polymer of glucose; 1-4 linkages; can be branched or unbranched
15. GLYCOGEN- polysaccharide; BRANCHED; animals use for energy storage; liver/muscle
16. STRUCTURAL POLYSACCHARIDES:  
CELLULOSE: 1-4 linkage like starch and glycogen  
BETA CONFIGURATION FOR ITS GLUCOSES(ie -OH's above the plane---unlike Alpha configuration where they are BELOW the plane)  
--never BRANCHED  
--because OH's are alternating, HYDROGENS BONDS can form between chains of monomers  
--this leads to MICROFIBRILS  
--this is the STRONG BUILDING MATERIAL FOR PLANTS  
-- Enzymes that can hydrolyze starch and glycogen can't break down cellulose—INSOLUBLE FIBER(Cows and termites have microorganisms in their gut that can digest it for them!)  
CHITIN- structural carbohydrate in arthropods similar to cellulose