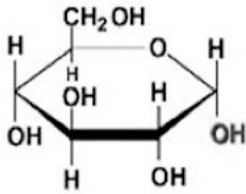
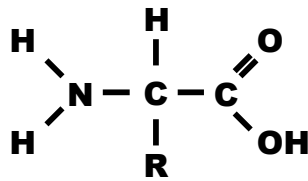


Carbohydrates, Lipids and Proteins (3.2)

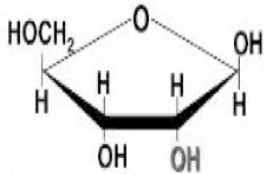
Identifying organic compounds (3.2.2)



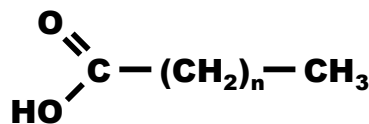
Glucose



Amino Acid



Ribose

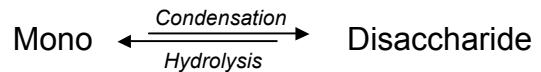


Fatty Acid

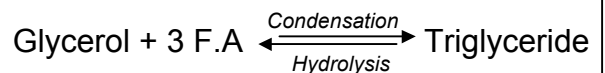
Outline condensation reactions & hydrolysis reactions (3.2.5)

- *Condensation joins & makes water*
- *Hydrolysis breaks & uses water*

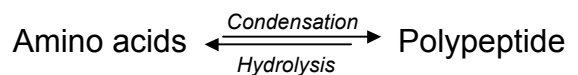
Carbohydrates:



Lipids:



Proteins:



List 3 examples of monosaccharides, disaccharides & polysaccharides (3.2.3)

Remember: Mono = Gives Great Flavor; Di = Largely Mid Sized, Poly = Can Get Stored

Monosaccharides

- G**lucose
- G**alactose
- F**ructose

Disaccharides

- L**actose
- M**altose
- S**ucrose

Polysaccharides

- C**ellulose
- G**lycogen
- S**tarch

State a function for the following sugars (3.2.4)

Animals:

- Glucose (*energy via cell respiration*)
- Lactose (*in milk; energy for infants*)
- Glycogen (*short-term energy storage*)

Plants:

- Fructose (*in honey; good energy source*)
- Sucrose (*used as a transport intermediate*)
- Cellulose (*component of plant cell wall*)

State the functions of lipids (3.2.6)

Remember: SHIPS

- S**torage of energy (*triglycerides*)
- H**ormonal signalling (*steroids*)
- I**nsulation (*triglycerides; sphingolipids*)
- P**rotection of internal organs
- S**tructure of membranes (*phospholipids*)

Types of bonding

- **Sugars:** Glycosidic linkage
- **Proteins:** Peptide bonds
- **Lipids:** Ester linkages

Compare lipid & sugar energy use (3.2.7)

Similarities:

- Both contain a lot of chemical energy
- Polysaccharides and lipids are both insoluble
- Both burn cleaner than proteins (no nitrogenous waste)

Differences:

- Lipids contain more energy per gram than sugars
- Lipids are therefore lighter than sugars of equal yield
- Carbohydrates more readily digested (short-term)
- Lipids less readily digested (long-term storage)
- Mono/disaccharides are water soluble; lipids are not
- Sugars easier to transport in bloodstream to sites of use