**Study Guide for Test: Organic Chemistry and Cells**

**Test: Tuesday March 3, 2015**

**Chemistry**

* Why water is important – Discussion question; 1 paragraph; state a function and explain why it is important to life; do 3 functions
* Elements needed to be organic
* Draw and explain dehydration synthesis and hydrolysis
* Monosaccharide: molecular formula; structural formula (be able to recognize); glucose function; isomers of monosaccharides
* Polysaccharides: 3 types, location, function
* Glycemic Index: What it is, what high and low mean, which one is better and why
* Lipids: structural difference between saturated and unsaturated fatty acids;

Sources of saturated and unsaturated fatty acids

* Proteins: aa order-🡪shape-🡪 function; denature; cause of denaturing
* Structural/fibrous vs globular/functional proteins
* Why enzymes are important to life

**Cells**

* 3 common parts in all human cells
* control of cell division; function of telomeres; Hay-Flick
* stem cells: what they are, why they are, 3 types, controversy
* Cancer: loss of control of cell cycle; progression of cancer
* How glucose, ions, oxygen, and carbon dioxide move across the membrane
* Solutions surrounding cells: hypotonic, hypertonic, isotonic;

Identify each and describe what happens to a cell in each

* Function of nucleus, mitochondria, RER, SER, Golgi, lysosomes