Student Questions

These questions were written and submitted at the end of lecture on the date indicated, and discussed with the class during the following lecture meeting. I recommend that you review these questions and your notes from our discussion as you learn biology.

Your next EXAM is scheduled for Friday, November 9th at 8:00am.

Friday, October 5th: Chemistry of Life
1. Will we be required to know (by heart) the sequences and formulas of molecules (e.g. DNA, amino acid parts, etc.) for exams?
2. Is it just the number of electrons that makes a charge positive or negative [on an ion]? If not, what’s the cause?
3. With ionic bonds, how is the electron given to the other atom/molecule? How would giving an electron away keep two molecules together?
4. How does salt help the body [or other organisms] again?
5. So, in polar covalent bonds, electrons are pulled more toward one atom?

Monday, October 8th: Organic molecules (cont’d)
1. What makes a fatty acid unsaturated?
2. How is a phospholipid made?
3. Which proteins are fibrous…which are globular?
4. How are proteins denatured?

Wednesday, October 10th: Cell Chemistry (esp. Membranes & Enzymes)
1. In lab, we looked at osmosis. What is reverse osmosis? (It is the first ingredient listed on flavored water drinks: “reverse osmosis water”.)
2. What does it mean to “put an enzyme into the mix”? Are [enzymes] already in the cells? What triggers their action?

Friday, October 12th: Cell Structure & Viruses
1. In lab this week, one of the eggs exploded, presumably due to the water molecules that diffused into the egg. How could this occur in humans, if too much water from our blood plasma entered our cells?
2. If everything is important in some way – why do viruses exist? Is it for population control? If so, how did they originate?
3. Who decided there are only 4 blood types? How was that decided?

Monday, October 22nd: Introduction to the Cell Cycle
1. If diabetes is due to a mistake in the DNA instructions to make the protein hormone insulin, what is the difference between juvenile (early onset) and adult (late onset) diabetes?
2. How do the chromosomes “match up” to make one [replicated] chromosome? What is the functional difference between a chromosome and the corresponding replicated chromosome?
Monday, November 5th: Cellular Energy
1. Because muscles use electricity to contract, is that why a defibrillator can shock a person’s heart into beating again?