Biology Spring Multiple Choice Final Study Guide

***Directions****: Answer all questions in complete sentences.*

1. Inheritance and Genetics
   1. Define the following terms:
      1. Somatic Cell
      2. Gamete
      3. Homologous Chromosome
      4. Autosomal
      5. Sex Chromosome
      6. Pedigree
      7. Homozygous
      8. Heterozygous
      9. Sex-linked
   2. How does crossing over during meiosis increase genetic diversity?
   3. Answer question # 26 on page 222 in the textbook
   4. Answer question #27 on page 222 in the textbook
   5. What percent of offspring will have blue eyes if a brown eyed Heterzygous man breeds with a brown eyed Heterzygous woman and blue eyes are recessive? (construct a punnet square)
   6. What chromosomes distinguish a woman from a man?
   7. What is the difference between heterozygous, homozygous recessive and homozygous dominant genotypes?
   8. How is the genetic code used to make proteins?
2. Evidence for Evolution
   1. Does natural selection act on genes or traits? Why?
   2. How does natural selection work?
   3. If you found a fossil of an organism that evolved long ago, would it most likely be towards the surface of earth or deeper underground?
   4. Why is the environment important for natural selection?
   5. Why is reproductive success important for natural selection?
   6. Why is variation important for natural selection?
   7. What is considered an adaptation?
   8. Describe **how** the each of the following is used as evidence for evolution:
      1. Fossils
      2. Homologous structures (Anatomy)
      3. Protein or amino acid comparisons (molecular evidence)
3. Experimental Design and Data Analysis
   1. What is the difference between an independent and dependent variable?
   2. When making a graph on which axis does the independent and dependent variables go on?
   3. What is the difference between a control and a constant when designing an experiment?