**AP Biology**

**Unit 5 – Heredity – Test Topics**

1. Questions using pedigree – predict genotypes and inheritance patterns (autosomal, sex-linked, recessive, dominant)
2. Mendel’s crosses – what did F1 and F2 generations tell us about heredity? What was important about the inheritance of the traits he chose (aka why did it allow him to discover the patterns that he did)?
3. Independent assortment
   1. When does it happen?
   2. Why is it important in genetics problems?
   3. When does it not happen?
4. Vocabulary:
   1. Testcross
   2. Dihybrid
   3. Monohybrid
   4. Epistasis – definition, examples, how can you tell this is the inheritance pattern?
   5. True-breeding
   6. Gamete
   7. Phenotype
   8. Genotype
   9. Heterozygous
   10. Homozygous
   11. Hemizygous
   12. Polygenic inheritance – definition, examples, how can you tell this is the inheritance pattern?
   13. Pleiotropy
   14. Allele
   15. Locus
   16. Parental-type offspring
   17. Recombinant-type offspring
   18. X-inactivation
   19. Aneuploidy (what is it, how does it happen, what diseases arise from it?)
5. Punnett square questions
   1. Sex-linked
   2. Multiple alleles (blood type)
   3. Complete dominance
   4. Dihybrid crosses (might be quicker to use laws of probability and monohybrid crosses)
6. Frequency of recombination based on linkage map
7. Given recombination frequencies, determine linkage map
8. Probability questions
   1. When do you use rule of multiplication?
   2. When do you use rule of addition?
9. Types of chromosomal mutations - definitions
10. Understand the heredity principles involved in:
    1. Huntington’s disease
    2. Down syndrome
    3. Calico cats
11. Understand the relationship of heredity to meiosis.
12. Understand how the following deviate from Mendel’s Laws and ratios:
    1. Incomplete dominance
    2. Sex-linked traits
    3. Co-dominance
    4. Linked genes
13. Chi square analysis with genetics problems