**Study Checklist for Biology Test 5: Genetics – Standard 4, Objective 1**

* Know what kinds of cells undergo Meiosis.
* What is the purpose of Meiosis?
* Know the stages of Meiosis I and what happens in each stage.
* Know the stages of Meiosis II and what happens in each stage.
* What are the differences and similarities between Meiosis I and II?
* What are the differences and similarities between Mitosis and Meiosis?
* Define “diploid”. Define “haploid”.
* How many total chromosomes do human beings have? How many pairs of chromosomes do human beings have?
* Define “chromosome”; “gene; “homologous”; “gamete”; “fertilization”.
* What is “crossing over”? When does it occur? Describe the process.
* What are the major differences between sexual and asexual reproduction?
* Describe the process whereby bacteria reproduce asexually.
* Describe the process whereby some organisms can reproduce both sexually and asexually (starfish, many plants, yeast).
* What is “mutation”? When can it occur? What might cause it to occur more often?
* What is a “mutagen”? Give some examples.
* What is cancer? Why and how does it occur? What might cause it to occur more often?
* Define “bioethics”.
* Define “replication”. What is DNA replication? When does it occur?
* Define “trait”. Give some examples of traits. What two factors influence traits?
* Define “variation”. What are some ways variation is obtained within a species?