**AICE Biology Guided Reading: Genetic Technology (Chapter 19)**This guided reading is due Monday, November 13.  This assignment is worth 40 points.

1. As you read, answer SAQ’s 19.1-19.11 on a separate sheet of paper. (5 pts)

2. Define the following bold-faced terms (located throughout the chapter) on a separate sheet of paper using the three-column note format (one column for the term, one column for the definition, and one column for a picture, diagram, or visual to help remember the term): (8 pts)

Gene Technology  
Recombinant DNA  
Vector  
Plasmids  
Restriction Enzyme  
DNA ligase  
Transformed  
Promoter  
Agarose  
Genetic Fingerprinting  
VNTRs  
Probes  
Microarrays  
Bioinformatics  
Genetic Screening  
Gene therapy  
Germ cells

3. Do your best to outline the process by which a genetically modified bacteria is created.  Include steps explaining how the plasmid is formed via restriction enzymes, how a target gene is inserted into a reproducing bacteria via a vector, and what term we use for successfully modified bacteria. (3 pts)

4. Outline the process by which insulin is produced using genetic engineering. (2 pts)

5. What is a promoter and what role does it serve? (2 pts)

6. What is an electrophoresis technique and how is it used to separate DNA? (2 pts)

7. Outline the process of polymerase chain reaction (PCR) (4 pts)

8. How does genetic screening work and what are some ethical concerns with this process? Include specifics regarding the test and how fetal genes are sampled. (3 pts)

9. Outline the process of gene therapy in general. What research has been done in terms of gene therapy to potentially cure Cystic Fibrosis? (3 pts)

10. Differentiate between somatic and germ cell gene therapy.  Which do we use in research now? (2 pts)

11. Outline the pros and cons of genetically modifying crops to be herbicide and/or insect resistant. (4pts)

12. What is Golden Rice, how was it produced, and why is it important? (2 pts)