Honors Biology – Unit 9 Objectives

1. Vocabulary: mRNA, tRNA, rRNA, transcription, translation, RNA polymerase, ribosome, ribosomal subunit, initiation, elongation, termination, promoter region, coding sequence region, terminator region, protein coding strand, start codon, stop codon, codon, primary transcript, mature RNA, anticodon, mG, poly A tail, intron, exon, splicing, amino acid binding site, charged/uncharged tRNA, A site, P site, E site, signal sequence, reading frame, frame shift, virus, lytic, and lysogenic.

2. Describe what happens in each stage of transcription.

3. Given a primary transcript, explain and/or sketch what modifications must be made to make it into mature mRNA, tRNA, and/or rRNA.

4. Given a mature strand of mRNA, describe the translation events that will create a protein. Include relevant details concerning codons, anticodons, ribosomal sites, etc.

5. Given a mature strand of mRNA, use a table to determine the order of amino acids it codes for.

6. Given a series of amino acids and relevant information regarding their structure and properties, show how functional groups interact to join the amino acids together and predict aspects of protein bending by using the affinity of each R group to its neighbors and the surrounding aqueous environment.

7. Compare and contrast the lytic and lysogenic methods of viral reproduction. Which aspect of their reproduction is used in biotechnology?