Name _____ Bio 205

Protein Synthesis Worksheet

1. Refresh your memory regarding the differences between transcription and translation.
   a. In what region of a prokaryote does transcription take place? _____
   b. Where would translation take place? _____
   c. Where in a eukaryote does transcription take place?_____
   d. Where in a eukaryote does translation take place? _____

2. Practice the process of transcription by making a mRNA strand for the following DNA strand.

DNA 5' GGG ATC GAT GCC CCT TAA AGA GTT TAC ATA TTG 3´

mRNA

3. Now it's time to practice the translation process.
   a. Go to the Blackboard website for Bio 205 and click on the assignments button.
   b. Click on the link titled "Protein synthesis link." You will be taken to another website where you can practice translation.
   c. Read the introductory material, then scroll down to the bottom of the page at this website to the section titled "Steps in translation." Watch this animation.
   d. Now hit the back button once. Find the section titled "Practice exercises" putting it all together. Do each of the three exercises.
   e. When you complete the third exercise, you will have manufactured a protein. Write the amino acid sequence for the protein you made below:

4. Review what you learned in class about mutations.
   a. Define what a mutation is.

   b. Consider the difference between frameshift and deletion/substitution mutations. Which type of mutation is more dangerous and why?