**CHEM523 Chapter 27 Study Guide** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer the following questions as thoroughly and completely as possible. Bring your answers with you to the final exam. You are free to use your textbook and the lecture notes I have posted online, but you **MAY NOT WORK IN GROUPS**. Your answers must be entirely your own. If I determine or suspect that you have not worked alone on these questions, **all parties involved will lose 5 points** on the final exam. If you do not understand a question, contact me for an answer, NOT your classmates. They don’t know any more than you do, so why ask them?!

1. What are the 5 stages of protein synthesis?
2. What is wobble (there are 2 meanings: One is more descriptive and the other is chemical) and what role does it play in the effects of nucleotide mutations on the chromosome? In other words: Think of any and all effects that wobble might have in the event of a random mutation.
3. Describe the differences between the tRNA synthetases.
4. How is an amino acid “primed” for conjugation onto the tRNA?
5. Draw the structure of: N-Formyl-methionine, Methionine and an Alanine-Alanine dipeptide. Based upon these structures, why do you think that N-formyl-methionine the first amino acid of every polypeptide chain synthesized by prokaryotes?
6. What are the 3 sites in a functional ribosome?
7. Draw the reaction mechanism for the transpeptidation reaction. Be certain that you box the sites and note any site-to-site transfers.
8. What is the Shine-Delgarno sequence and why is it important?
9. Describe the experiment performed by Nuremberg and Matthaei. What did it prove?
10. What is the universal start codon? What are a couple of common stop codons? Other than those 3 codons, what is your favorite and what amino acid does it encode?