**Protein Synthesis Study Guide—Test on Tuesday, March 6th**

Vocabulary:

Transcription

Translation

mRNA

tRNA

Ribosome

Codon

Anticodon

Splicing

Introns

Exons

GTP cap

poly-A tail

RNA polymerase

Retrovirus

Reverse transcriptase

Polypeptide

Template strand

rRNA

Chaperones

Endoplasmic reticulum

Golgi apparatus

Reading frame

Signal sequence

Mutation

Silent mutation

Missense mutation

You Need to Know/Be able to…

* Compare and contrast the structures and functions of DNA, mRNA, tRNA, and rRNA
* Explain how transcription enables the DNA message to be carried by mRNA
* List the events of mRNA processing and differentiate between introns and exons
* Describe the action of retroviruses and the function of reverse transcriptase
* Describe the interaction between the ribosome, mRNA, and tRNA during translation
* Understand why codons are three nucleotides in length
* Given a DNA sequence, transcribe it to mRNA, identify the tRNA anticodon, and translate it to the correct amino acid sequence
* Explain how the genetic code enables tRNA to “translate” mRNA codons into amino acids
* Describe the structure of tRNA and how that structure makes translation possible
* Describe the consequence of altering the nucleotide sequence
* Identify different reading frames
* Explain how proteins that need to be in the cell membrane or transported out of the cell are synthesized by ribosomes on the ER and then transported via the Golgi apparatus