

Target Practice, Unit 6 Test, Topic #3 – Protein Synthesis

1. Fill in the following chart to explain the differences between DNA and RNA.

	DNA	RNA
Number of Strands		
Nitrogen Base		
Sugar		

2. Use the following chart to explain the differences between the three types of RNA

	Main Function	Nitrogen Bases Used	Image
mRNA (messenger)			
tRNA (transfer)			
rRNA (ribosomal)			

3. Use the following chart to provide a general overview of Protein Synthesis

	Transcription	Translation
What Happens?		
Where does it happen?		
What molecules are involved?		

4. Three bases on the mRNA strand are called _____ whereas three bases on tRNA are called _____.

5. Using the following DNA strand, figure out the following:

DNA: A G C T G C T T C G A A

- a. mRNA: _____
- b. tRNA: _____
- c. Amino Acid Sequence: _____

6. Describe the following types of mutations:

- a. Point
- b. Frameshift
- c. Nonsense
- d. Missense
- e. Insertion
- f. Deletion

7. Describe the following types of chromosomal mutations:

- a. Translocation
- b. Deletion
- c. Duplication
- d. Inversion
- e. Insertion

8. What type of mutations can be passed on to offspring? Why?

9. Complete the box below. Classify it as a Point or a Frameshift Mutation. If it is a point mutation, classify it as a missense, nonsense or silent mutation

Original DNA Sequence:	T A C A C C T T G G C G A C G A C T
mRNA Sequence:	_____
Amino Acid Sequence:	_____

Mutated DNA Sequence #1:	T A C A T C T T G G C G A C G A C T
What's the mRNA sequence?	_____ (Circle the change)
Amino acid sequence?	_____
Point or Frameshift?	_____
Missense, Nonsense or Silent?	_____