Biology: Unit VI- DNA **Name: _____**
Protein Synthesis **Date: _____ Per. _____**
Transcription, Translation, and Mutations Quiz Review Guide

Instructions: Answer the questions using your warm-ups, notes and activities from class.

Part 1- RNA

1. What does **RNA** stand for?

2. What kind of **biomolecule** is RNA?

3. What is the **monomer** of RNA and what are the THREE parts?

4. List **AT LEAST** 2 ways you can tell the difference between **DNA** and **RNA**.

5. What is **Helicase**? What does it do?

6. What is **DNA Polymerase**? What does it do?

7. What is **RNA Polymerase**? What does it do?

8. In the spaces below, list the THREE types of **RNA,** draw an image that represents them, and explain the function they serve:

RNA type			
Image of RNA			
Function of RNA			

9. What is a **codon**? What is an **anticodon**?

10. How do **codons** and **anticodons** relate to one another?

11. What is the function of a **codon**? **anticodon**?

<u>Part 2</u>- Protein Synthesis

12. What is the flow of information within cells to go from DNA to Protein? Draw a ***simplified*** flowchart below: (***hint: think of the*** "**Big Picture**").

13. Fill in the table below to answer questions regarding the 2 phases of Protein Synthesis, **Transcription** and **Translation**:

Name	Transcription	Translation
What happens during the process?		
Where does the process take place?		
What enzymes and/or organelles are involved?		
Draw a quick sketch of the processes together		

Part 3- Mutations

14. What is a **mutation**?

15. What is the term for something that causes a mutation to occur? What are some examples?

16. What are the THREE possible **outcomes** of a mutation?

17. What are the TWO main **types** of mutations? Please give a brief description of each.

18. Which type of mutation has a greater chance of effecting the amino acid sequence and why?

19. Examine the DNA sequences below. Label what **type of mutation** has occurred. Please **transcribe** and **translate BOTH** the normal and the mutated DNA sequences to compare the products:

DNA (normal)	TAC GTA CCT CAT ATT	TAC GAC AAA TGC ACT	TAC GTT TTA CAG ATC
DNA (mutated)	TAG TAC CTC ATA TT	TAC GTC AAA TGC ACT	TAC TGT TTT ACA GAT C
Mutation Type ***(be specific)***			
DNA (normal)	TAC GTA CCT CAT ATT	TAC GAC AAA TGC ACT	TAC GTT TTA CAG ATC
Transcription			
Translation			
DNA (mutated)	TAG TAC CTC ATA TT	TAC GTC AAA TGC ACT	TAC TGT TTT ACA GAT C
Transcription			
Translation			
Outcome			