Name _____ Date _____ Period _____

Worksheet: DNA, RNA, and Protein Synthesis

B I O L O G Y : C h a p t e r 6 - 9

Directions: *Use your notes and book to answer the following questions concerning Replication, Transcription, and Protein Synthesis.*

1. Define the following terms:

   a. **Replication**-

   b. **Transcription**-

   c. **Translation**-

2. Break the following DNA sequence into **triplets**. (Draw a line to separate triplets)

C C G A T A C G C G G T A T C C C A G G G C T A A T T U A A

3. If the above code showed the bases on one strand of DNA, what would the **complementary strand** read?

4. What would the code in problem #2 be **transcribed** into (What would the mRNA sequence be?)

5. How many **codons** are there in the above problem?

6. What is the three letter sequence on a **tRNA** molecule called?

7. How many different **amino acids** are there that make up all of the proteins in our body?

8. How many different **codons** are there?

9. What would the **amino acid sequence** be translated from the mRNA sequence in problem #4? (Use the Genetic Code table below to translate)

Codons Found in Messenger RNA

First Base	Second Base U	Second Base C	Second Base A	Second Base G	Third Base
U	Phe	Ser	Tyr	Cys	U
	Phe	Ser	Tyr	Cys	C
	Leu	Ser	Stop	Stop	A
	Leu	Ser	Stop	Trp	G
C	Leu	Pro	His	Arg	U
	Leu	Pro	His	Arg	C
	Leu	Pro	Gln	Arg	A
	Leu	Pro	Gln	Arg	G
A	Ile	Thr	Asn	Ser	U
	Ile	Thr	Asn	Ser	C
	Ile	Thr	Lys	Arg	A
	Met	Thr	Lys	Arg	G
G	Val	Ala	Asp	Gly	U
	Val	Ala	Asp	Gly	C
	Val	Ala	Glu	Gly	A
	Val	Ala	Glu	Gly	G

10. Complete the table below. Use the following DNA sequence.

C G G C T A T T C G A C C C T T A C G G T A T T G G G

DNA triplets	mRNA codon	tRNA anticodon
CGG	GCC	CGG