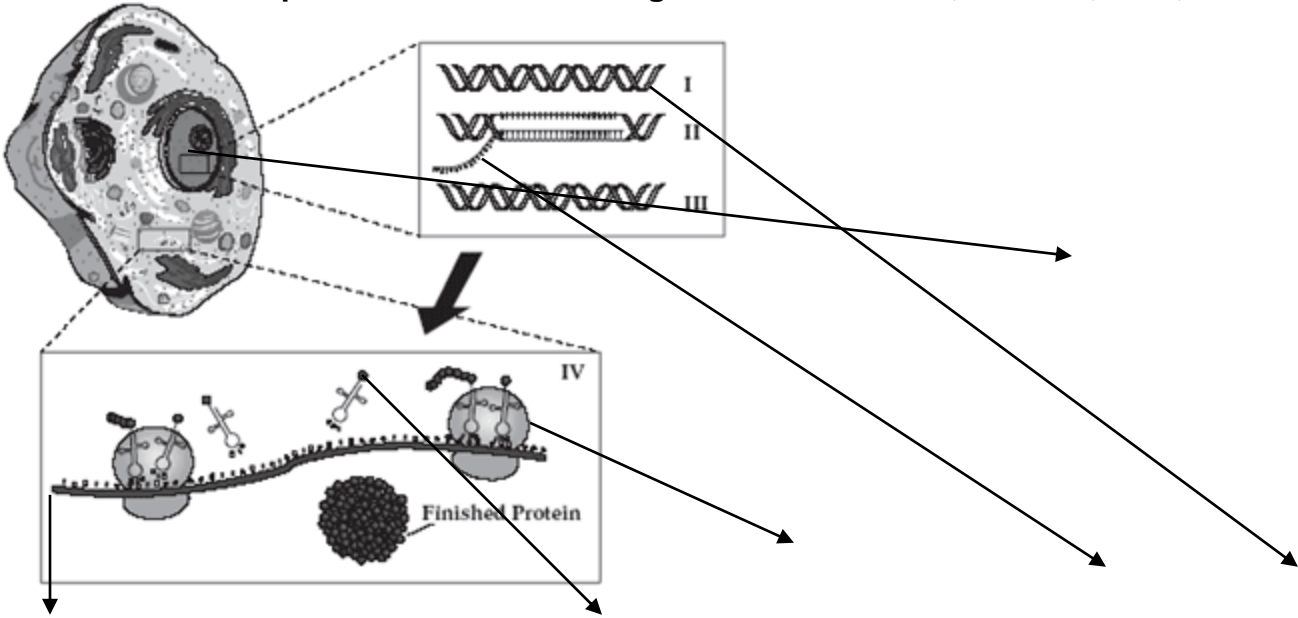


# PROTEIN SYNTHESIS WORKSHEET

Name \_\_\_\_\_

**PART A-**Label the picture with the following words. Ribosome, nucleus, DNA, mRNA (2), tRNA



**PART B. Answer the following questions on your paper:**

1. What is the first step of protein synthesis? \_\_\_\_\_
2. What is the second step of protein synthesis? \_\_\_\_\_
3. Where does the first step of protein synthesis occur? \_\_\_\_\_
4. Where does the second step of protein synthesis occur? \_\_\_\_\_
5. Nitrogen bases are read \_\_\_\_\_ bases at a time.
6. Three bases on a mRNA strand that code for an amino acid are called \_\_\_\_\_.
7. What is the start codon? \_\_\_\_\_
8. What are the stop codons? (Use your codon chart) \_\_\_\_\_
9. A bunch of amino acids attached together is called a \_\_\_\_\_.

**PART C. Use your codon chart or the chart to determine the amino acid sequence. Remember to read through the strand and ONLY start on AUG and STOP when it tells you to stop. Follow example below:**

Example:

DNA →	AGA CGG TAC CTC CGG TGG GTG CTT GTC TGT ATC CTT CTC AGT ATC
mRNA →	UCU GCC AUG GAG GCC ACC CAC GAA CAG ACA UAG GAA GAG UCA UAG
protein →	start - glu - ala - thre - hist - asp - glu - threo - stop
	acid acid

1. DNA → CCT CTT TAC ACA CGG AGG GTA CGC TAT TCT ATG ATT ACA CGG TTG CGA TCC ATA ATC  
mRNA →  
protein →
2. DNA → AGA ACA TAA TAC CTC TTA ACA CTC TAA AGA CCA GCA CTC CGA TGA ACT GGA GCA  
mRNA →  
protein →
3. DNA → TAC CTT GGG GAA TAT ACA CGC TGG CTT CGA TGA ATC CGT ACG GTA CTC GCC ATC  
mRNA →  
protein →
4. DNA → TAA ACT CGG TAC CTA GCT TAG ATC TAA TTA CCC ATC  
mRNA →  
protein →

**PART C - Circle the correct choice within the parenthesis for 1 -18.**

1. (DNA/RNA) can leave the nucleus.
2. mRNA is made during (transcription/translation).
3. mRNA is made in the (cytoplasm/nucleus).
4. DNA is located in the (nucleus/cytoplasm)
5. (Translation/Transcription) converts DNA into mRNA.
6. (mRNA/rRNA) is used to carry the genetic code from DNA to the ribosomes.
8. (DNA/RNA) uses uracil instead of thymine.
9. (RNA/amino) acids make up a protein.
11. Transcription takes place in the (nucleus/cytoplasm).
12. tRNA is used in (translation/transcription).
13. tRNA uses (anticodons/codons) to match to the mRNA.
14. Proteins are made at the (nucleus/ribosome).
15. (tRNA/mRNA) attaches the amino acids into a chain.
16. tRNA is found in the (nucleus/cytoplasm).
17. (Translation/Transcription) converts mRNA into a protein.
18. Translation takes place in the (cytoplasm/nucleus).