Name _____ Date _____ Per _____

Practicing DNA Transcription and Translation

For the following examples, give the appropriate sequence of DNA, mRNA, tRNA and/or polypeptide (AA = amino acids). ***Remember:*** *A codon chart can only be used for decoding a strand of* ***mRNA****.*

Codon Chart

First Position (5')	Second Position: U	Second Position: C	Second Position: A	Second Position: G	Third Position (3')
U	Phenylalanine	Serine	Tyrosine	Cysteine	U
	Phenylalanine	Serine	Tyrosine	Cysteine	C
	Leucine	Serine	Stop	Stop	A
	Leucine	Serine	Stop	Tryptophan	G
C	Leucine	Proline	Histidine	Arginine	U
	Leucine	Proline	Histidine	Arginine	C
	Leucine	Proline	Glutamine	Arginine	A
	Leucine	Proline	Glutamine	Arginine	G
A	Isoleucine	Threonine	Asparagine	Serine	U
	Isoleucine	Threonine	Asparagine	Serine	C
	Isoleucine	Threonine	Lysine	Arginine	A
	Methionine	Threonine	Lysine	Arginine	G
G	Valine	Alanine	Aspartic acid	Glycine	U
	Valine	Alanine	Aspartic acid	Glycine	C
	Valine	Alanine	Glutamic acid	Glycine	A
	Valine	Alanine	Glutamic acid	Glycine	G

Example 1:

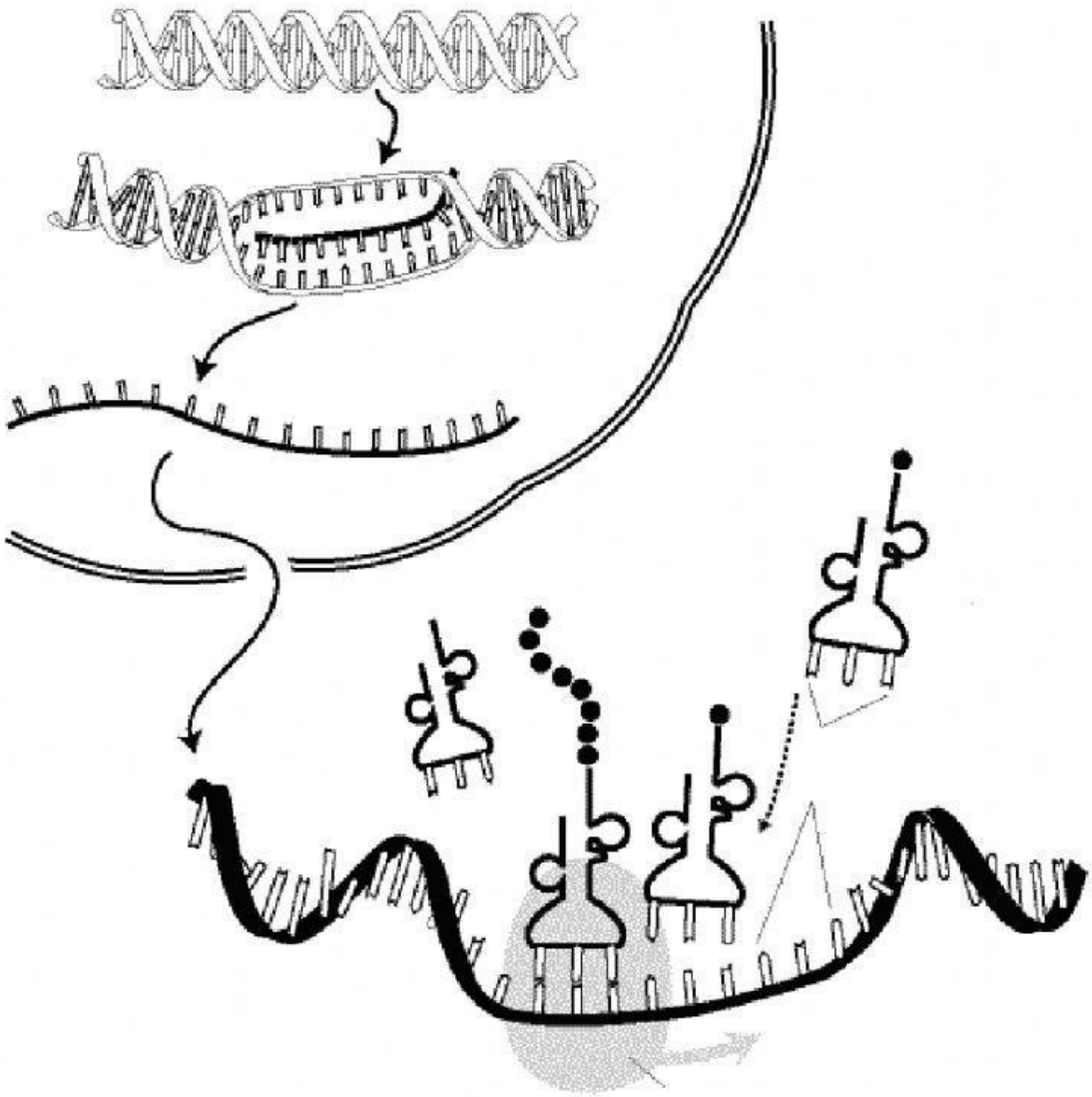
DNA:	T A C	G C G	C C T	A G G	G G G	T G G
mRNA:	_____	_____	_____	_____	_____	_____
AA:	_____	_____	_____	_____	_____	_____

Example 2:

DNA:	T T C	G A T	T A G	A T G	C C G	A A G
mRNA:	_____	_____	_____	_____	_____	_____
tRNA:	_____	_____	_____	_____	_____	_____
AA:	_____	_____	_____	_____	_____	_____

Example 3:

DNA:	C _ _	_ G _	A _ _	_ A _	_ _ C	_ T _
mRNA:	_ U _	_ _ A	_ _ C	_ _ A	_ G _	_ A _
tRNA:	_ A U	G _ U	_ U G	G _ U	C C _	G _ A
AA:	_____	_____	_____	_____	_____	_____

Protein Synthesis Overview Diagram

Label the summary of protein synthesis diagrammed below using the following terms: **transcription, translation, DNA, mRNA, ribosome, tRNA, amino acid, polypeptide, nucleus, codon, and anticodon.**