Biology 1 Name:

***Mutation Practice***  Date:

***Exercise***  Hour:

Original DNA Strand: **TACCCGATACTAAAATGAGAGCGCATT**

**Types of mutations:** *deletion insertion*

*substitution inversion*

*translocation*  *duplication*

**Highlight the change (mutation) in each of the following strands and identify the mutation**

TACCCGATACTAAATGAGAGCGCATT

1. What type of mutation has occurred in the above version of the DNA strand? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Is it a frameshift? \_\_\_\_

TACCCGATACTAAAATGAGAGGGCATT

1. What type of mutation has occurred in the above version of the DNA strand? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Is it a frameshift? \_\_\_\_

TACCCGATAAATCAATGAGAGCGCATT

1. What type of mutation has occurred in the above version of the DNA strand? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Is it a frameshift? \_\_\_\_

TACGAGCGCCCGATACTAAAATGAATT

1. What type of mutation has occurred in the above version of the DNA strand? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Is it a frameshift? \_\_\_\_

TACCCGATACTAAAATTGAGAGCGCATT

1. What type of mutation has occurred in the above version of the DNA strand? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Is it a frameshift? \_\_\_\_

TACCCGATACTACTACTAAAATGAGAGCGCATT

1. What type of mutation has occurred in the above version of the DNA strand? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Is it a frameshift? \_\_\_\_

Biology 1 Name:

***Transcription & Translation Practice***  Date:

***Exercise***  Hour:

Original DNA Strand: **TACCCGATACTAAAATGAGAGCGCATT**

Original mRNA Strand: **AUGGGCUAUGAUUUUACUCUCGCGUAA**

Original amino acid Methionine, Glycine, Tyrosie, Aspartic Acid, Pheynlalanine,

sequence: Threonine, Leucine, Alanine, STOP

**Highlight the change (mutation) in each of the following strands (you did this already – look at page 1) and transcribe the DNA into a molecule of mRNA, then translate the mRNA into a sequence of amino acids.**

TACCCGATACTAAATGAGAGCGCATT

1. mRNA strand: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

amino acid

sequence: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

TACCCGATACTAAAATGAGAGGGCATT

1. mRNA strand: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

amino acid

sequence: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

TACCCGATAAATCAATGAGAGCGCATT

1. mRNA strand: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

amino acid

sequence: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

TACGAGCGCCCGATACTAAAATGAATT

1. mRNA strand: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

amino acid

sequence: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

TACCCGATACTAAAATTGAGAGCGCATT

1. mRNA strand: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

amino acid

sequence: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

TACCCGATACTACTACTAAAATGAGAGCGCATT

1. mRNA strand: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

amino acid

sequence: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. CONCLUSION: How does a mutation affect a protein?