Transcription and Translation Practice

Directions: Use the DNA sequences to figure out what the amino acid sequence of the protein they code for is.

STEP 1: transcribe a pre-mRNA sequence

 STEP 2: remove introns from the sequence

STEP 3: translate into amino acids by using the universal genetic code. Begin with the first AUG codon from the 5’ end. (mRNA read from left to right is in the 5’🡪 3’ direction) End at the first stop codon.

1: DNA template strand:

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| Exon 1 | Intron 1 | Exon 2 | Intron 2 | Exon 3 |
| T | C | C | T | A | T | A | C | T | G | C | C | A | G | G | A | T | A | C | A | T | A | C | G | G | G | C | T | A | A | A | A | A | T | T | G | G | C | A |

Pre-mRNA:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Mature mRNA:

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Amino acid sequence:

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2: DNA coding strand from prokaryote:

ATC-GGG-ATG-CTC-CCC-TAA-GCC-AAA-AGT-TAG-ATC

Pre-mRNA:

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Mature mRNA:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino acid sequence:

|  |  |  |  |  |  |  |
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