***Answer the following questions in the space provided.***

1. Name the amino acids that correspond with the following mRNA codons:

1. AGA \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. GCC\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. CUU \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. UGA \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. A geneticist isolates a strand of DNA containing the following nucleotide sequence:

**TACGGTCACATGATT**

a) Provide the nucleotide sequence of the mRNA strand transcribed from this sequence.

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

b) What is the amino acid sequence of the polypeptide produced from this strand of mRNA?

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3. The same geneticist then isolates the following polypeptide**: met-lys-his-trp.**

1. What amino acids make up this polypeptide?

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1. How many different nucleotide sequences could code for this polypeptide? List these sequences.

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1. Which important characteristic of the genetic code is illustrated in b)? How does this characteristic reduce the number of amino acids that are incorrectly translated?

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