

## Translation

### Read Chapter 9.3

#### Fill in the blanks

1. Translation is the process of synthesizing a \_\_\_\_\_ from an mRNA sequence.
2. Ribosomes are organelles that are made up of a large and a small subunit, composed of \_\_\_\_\_ and \_\_\_\_\_.
3. The (mRNA, tRNA, or rRNA) \_\_\_\_\_ is the type of RNA that is produced from transcription of a gene.
4. mRNA molecules are made up of 3-nucleotide sequences called \_\_\_\_\_.
5. tRNA molecules carry the amino acid and contain an \_\_\_\_\_ that binds to the codon.
6. The beginning of the mRNA molecule is the \_\_\_\_\_ end and the first amino acid is always \_\_\_\_\_.
7. The large subunit of the ribosome contains 3 sites, the A, P, and E site. The peptide bonds are formed in the \_\_\_\_\_ site.
8. New amino acids enter the ribosome in the \_\_\_\_\_ site.
9. Empty tRNA molecules leave the ribosome from the \_\_\_\_\_ site.
10. Ribosomes can be found in the cytoplasm or on the \_\_\_\_\_.
11. Some proteins need to be modified after translation, called post-translational modification and this occurs in the \_\_\_\_\_.
12. If a lipid is added to a protein it is called a \_\_\_\_\_.
13. If glucose molecules are added to a protein it is called a \_\_\_\_\_.
14. Every 3 mRNA nucleotides is a codon. Using the genetic code, what amino acid does the codon UCA code for? \_\_\_\_\_
15. What is the anticodon on the tRNA that carries Trp? \_\_\_\_\_
16. If this is an mRNA sequence, what is the amino acid sequence?  
5' CUGGUUACG 3' \_\_\_\_\_

17. If a DNA mutation caused the mRNA sequence to change from CAU to CAC, what kind of mutation is this? \_\_\_\_\_

18. We need to eat \_\_\_\_\_ to ensure we always have a pool of amino acids for translation to occur.

19. Name some hormones that stimulate protein synthesis:

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_