**DNA Exam review sheet**

This review sheet is due on the day of your DNA exam:

Thursday, February 8/Friday, February 9, 2018

1. What does DNA stand for?
2. What are the three parts to a nucleotide of DNA?
3. What is the shape of DNA?
4. What are the three types of nitrogenous base in DNA?
5. What are the base pairing rules?
6. How does DNA code for traits?
7. Place the following terms in the correct order from smallest to largest:

Chromosome, DNA, nucleus, gene, nucleotide

1. True or false: all living organisms have DNA nucleotides that are chemically identical.
2. True or false: all living organisms have an identical sequence of DNA.
3. Identify the location, starting material, and ending material for each of the following processes:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Location | Starting material | Ending material |
| DNA Replication |  |  |  |
| Transcription |  |  |  |
| Translation |  |  |  |

1. What are THREE differences between DNA and RNA for the following?

|  |  |  |  |
| --- | --- | --- | --- |
|  | SHAPE | NITROGENOUS BASES | SUGAR |
| DNA |  |  |  |
| RNA |  |  |  |

1. If a DNA sequence reads: TAC CGC GGG CAT GAT ACT, what would the complementary mRNA sequence read?
2. Draw/upload a picture of DNA replication.
3. In what part of the cell cycle does DNA replication occur?
4. Summarize transcription in 3-5 steps.
5. What are the three types of RNA that are involved in translation, and what does each do?
6. Fill in the blanks to describe translation:
   1. When the mRNA is in the cytoplasm, it is sandwiched by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
   2. A tRNA molecule that is the complement of the \_\_\_\_\_\_\_\_\_\_\_\_ in the mRNA fits into the ribosome, and is attached to an \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ at its other end.
   3. The ribosome shifts down to read another \_\_\_\_\_\_\_\_\_\_\_\_\_.
   4. The ribosome reads the entire mRNA strand until the \_\_\_\_\_\_\_\_\_\_\_\_ codon is read. The ribosome and tRNAs leave the mRNA and a complete \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ has been constructed.
7. What is a codon and on what molecule is it found?
8. What is an anticodon and on what molecule is it found?
9. Use your codon chart to write the sequence of amino acids coded for in the DNA sequence in question 12 (TAC CGC GGG CAT GAT ACT).
10. List 3 amino acids that are coded for by MORE than one codon (use your codon chart).
11. List 2 amino acids that are ONLY coded for by ONE codon (use your codon chart).
12. If an ANTICODON sequence is: ACG, what is the corresponding DNA sequence?
13. What is the **DNA sequence** that codes for the amino acid tryptophan?