**LS 11 Protein Synthesis Worksheet**

1. Compare DNA and RNA:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Sugar | How many strands | Nitrogenous Bases | Location | Function |
| DNA |  |  |  |  |  |
| RNA |  |  |  |  |  |

2. Describe DNA replication (include the words: DNA polymerase, nucleotides, and semiconservative).

3. What does semiconservative mean?

4. Describe the process of transcription (include the words: RNA polymerase, RNA nucleotides, nuclear pore, nucleus).

5. Describe the process of translation (include the words: mRNA, tRNA, ribosome, polypeptide, codon).

7. List the roles of the three types of RNA:

|  |  |
| --- | --- |
| RNA | Function |
| mRNA (messenger RNA) |  |
| rRNA  (ribosomal RNA) |  |
| tRNA  (transfer RNA) |  |

9. Compare transcription and translation:

|  |  |  |
| --- | --- | --- |
| Process | Where does it occur? | Product |
| Transcription |  |  |
| Translation |  |  |

10.What is a codon? Give an example.

12.Write the complementary strand of RNA to this DNA strand:

DNA strand: C T G A A T C C G

RNA strand:

Amino Acid:

13. What is the start codon? \_\_\_\_\_\_\_\_\_\_\_\_

16.How many codons code for “stop”? \_\_\_\_\_\_

17.What do “stop” codons do?

6. In RNA, what bases pair up?

18.What is the codon for the amino acid tryptophan?

19.What are the building blocks of proteins?

20.What are the three parts of a nucleotide?

13.If an mRNA codon is GUA, what would the tRNA anticodon be? \_\_\_\_\_\_\_\_

14.For the mRNA codon GUA, what would the corresponding amino acid be?

15.For the mRNA codon CCG, what would the corresponding amino acid be?