PROTEIN SYNTHESIS WORKSHEET

1. Name molecules in cells that contain the hereditary or genetic code for determination of the sequence of amino acids in protein molecules.

……

2. Describe the hereditary or genetic code.

……..

3. The hereditary code becomes copied during **transcription**. List the events involving DNA, DNA polymerase, RNA nucleotides, RNA polymerase, mRNA, and ATP that occur during this process.

a) ……
b) ……
c) ……
d) …….
e) …….
f) …….

4. Distinguish between introns and exons.

……..…

5. Explain the rules that govern pairing and bonding of nitrogenous bases in nucleic acids.

…….
……..…

6. Name a nitrogenous base that is present in DNA but is absent from RNA.

……

7. Name a nitrogenous base that is present in RNA but is absent from DNA.

……

8. The hereditary code becomes interpreted during **translation** and amino acids become joined together in polypeptide chains of protein molecules. Describe the roles of rRNA, mRNA, and tRNA during translation.

a) rRNA:

……

b) mRNA:

……

c) tRNA:

……

9. Distinguish between codon and anticodon.

……

10. What is a mutation?

……

11. Describe the main event that occurs during each of the following types of gene mutation.

a) base-pair substitution

……

b) insertion

……...

c) deletion

……

12. State the term that refers to mutation-causing agents in the environment and name two examples of these agents.

Term:…….

Examples:……..

13. Explain why mutations affect protein synthesis.

……