

NAME _____

BLOCK _____

BIOLOGY 12: CHAPTER 25/26.1 - REVIEW WORKSHEET
DNA REPLICATION, PROTEIN SYNTHESIS, & RECOMBINANT DNA

A. DEOXYRIBONUCLEIC ACID (DNA)

1. Where are the genes found in a cell? Name the two groups of nitrogenous bases found in chromosomes.

2. List the three subunits of every nucleotide found in nucleic acid. What are the specific pairings of the bases in DNA?

3. The two _____ of DNA twist about one another to form a _____ helix with the two strands held together by _____ bonds between the purines and pyrimidines.
4. How does the structure of unwound DNA compare to that of a ladder?

5. Name the two scientists that first determined the structure of DNA.

6. List the three basic functions that DNA, as a hereditary material, must be able to do.

7. a) What is the function of helicase?

- b) What is the function of DNA polymerase?

#3 AGC CCG GCC ACC CGG AGG

7. Below is the base sequence for the normal protein for normal hemoglobin and the base sequence for the sickle cell hemoglobin.

Normal GGG CTT CTT TTT
Sickle GGG CAT CTT TTT

- A. Transcribed and translate the normal and sickle cell DNA.
- B. Identify this as a point or frameshift mutation. Explain.
- C. If the base sequence read GGG CTT CTT AAA instead, would this result in sickle cell hemoglobin? Explain