

Name _____

DNA Structure and Replication Reading Guide

Directions—Begin reading on page 194 and address each item in the space provided.

Section 2 The Structure of DNA

1. Name the two scientist that are credited with discovering the structure of the DNA molecule.
2. What is meant by the “double helix” of DNA structure.
3. What is the name of a subunit of DNA and identify each of the three parts.
4. What is the name of the five carbon sugar of DNA and what is the name for each of the four types of nitrogen bases?
5. What is the name for the type of weak bond that chemically holds nitrogen bases together?
6. What important discovery did Erwin Chargaff make that was useful information for Watson and Crick to determine DNA’s structure?
7. What important discovery did Rosalind Franklin and Maurice Wilkins make that was useful information for Watson and Crick to determine DNA’s structure?
8. Explain how the “base-pairing” rules serve the basis of the complementary nature of DNA’s structure.

Section 3 The Replication of DNA

9. During which phase of the cell cycle does DNA Replication occur?
10. What enzyme is involved in the first step of DNA Replication and what is accomplished by this enzyme?
11. What enzyme is involved in step 2 of DNA Replication and what is accomplished by this enzyme?
12. Step 3 of DNA Replication completes the process producing two two strands, why do you think this is referred to as being “semi-conservative”?
13. Why do you think it is important to check for errors (proofread) the process of DNA Replication?