

BIOLOGY 11 – PRE-LAB EXERCISE

19

Name:

Lab Day & Time:

DNA & Biotechnology

1. What is molecular genetics?

What is biotechnology?

2. What is DNA replication?

When in the cell cycle does DNA replication occur?

3. What is the monomer of the DNA macromolecule called?

What are the three parts of the DNA monomer?

Which part of the four different monomers makes them different?

4. Examine **Figure 19.1** in your *Lab Manual*. Describe the shape of a DNA molecule.

What part(s) of the DNA monomer make up the “sides” of the ladder?

What part(s) of the DNA monomer make up the “rungs” of the ladder?

What do the G's, C's, T's, & A's in the Figure represent?

What is complementary base pairing?

What are the rules for complementary base pairing?

5. Examine **Figure 19.2** in your *Lab Manual*. Why is complementary base pairing important for DNA replication?

6. What is a DNA fingerprint?

What are the three steps required to get a DNA fingerprint?

What is a restriction enzyme?

During electrophoresis, what causes the DNA fragments to move through the gel?

What causes different fragments to move at different rates through the electrophoresis gel?

Examine **Figure 19.13** in your *Lab Manual*. Which Suspect matches the DNA found at the crime scene?