DNA REPLICATION REVIEW

Name: _____

1. DNA needs to be _____ before a cell divides.
2. Replication ensures that each resulting cell will have an _____ set of DNA.
3. Replication follows the complementary _____ pairing rules:
    a. Adenine Pairs with _____
    b. Guanine Pairs with _____
4. One side of the DNA molecule is a _____ for making the new strand.
5. During DNA replication, the DNA molecule _____ into two strands, then produces two new _____ strands following the rules of base pairing.
6. Each strand of the _____ _____ serves as a template for the new strand.
7. DNA replication is carried out by a series of _____.
8. One of these enzymes, called _____, untwists and "unzips" a molecule of DNA. Hydrogens bonds between base pairs are _____ and the two strands of DNA _____.
9. The place where separation and replication occur is called the _____ _____.
10. Each strand serves as a _____ for the attachment of complementary _____.
11. Write the complementary strand for the template strand given here:

    ATGATATGGATGATTCCACCA

12. The result of DNA replication is two DNA molecules that are _____ to each other and to the _____ molecule.
13. Each DNA molecule, during replication has one _____ strand and one _____ strand. This is why the process of DNA replication is considered _____-_____.
14. In the data table below, give a brief description of the job of each of the enzyme/proteins:

Enzyme	**Function**
Helicase	
Single Stranded Binding Proteins	
RNA Primase	
DNA Polymerase I	
Ligase	

Topoisomerase	
DNA Polymerase III	

15. Write out the steps (in order) that occur during DNA Replication.

16. The building blocks (monomers) of DNA are known as _____.
17. Draw and label the three parts of a nucleotide. Label the carbons in the sugar.

18. Draw the structure of the two types of nitrogenous bases.

Purine:	Pyramidine:

19. The pyrimidine bases are _____ & _____.
20. The purine bases are _____ & _____.
21. DNA replication occurs in this direction: _____.
22. Nucleotides are attached by _____ bonds between the _____.
23. What is the organization of DNA?

24. What are the "sides" of the DNA ladder made of? _____
25. Why does DNA Replicate?