Nucleic Acids

Read Chapter 2.4

Fill in the Blanks

1. Humans have _____ number of chromosomes.
2. In a cell, DNA is located in the _____.
3. The building blocks (monomer) of DNA are _____.
4. The 3 components of a nucleotide are:
    a. _____
    b. _____
    c. _____
5. The sugar of a nucleotide has ____ carbons.
6. Adenine and guanine are double-ringed nucleotides called _____.
7. Cytosine, Thymine, and Uracil are single-ringed nucleotides called _____.
8. Which nucleotide is found only in RNA? _____
9. The DNA structure is a _____.
10. The bond between the sugar and the base is a _____ bond.
11. The bond between the sugar and the phosphate is a _____ bond.
12. The DNA strands are _____ because they are oriented in opposite directions.
13. The bases from complementary strands are held together by _____ bonds.
14. Each DNA strand has a 5' end and a _____ end.
15. Adenine nucleotides always bond with _____
16. Guanine nucleotides always bond with _____
17. There are _____ hydrogen bonds between Adenine and Thymine and there are _____ hydrogen bonds between Cytosine and Guanine.
18. How are RNA molecules different from DNA molecules:

Characteristic	**DNA**	**RNA**
Structure		Single strand
Nucleotides		A, U, C, G
Sugar	Deoxyribose	
Location	Nucleus	
Function	Stores genetic information	

19. RNA is made from the template strand of the DNA; the template strand is also called the _____ strand.
20. The enzyme that produces RNA from DNA is called _____
21. Given the following DNA sequence, what is the complementary DNA strand?

    3’ ATGCTGGAT 5’

    _____
22. If the above strand was a template strand, what would the RNA sequence be?

    _____