Chapter 12 Study Guide – DNA

SECTION 1

1. Describe Griffith's experiments with mice. What did he find?
2. Describe what Avery did that built on Griffith's experiment. What did he find?
3. How were bacteriophages used by Hershey and Chase? What did they find?
4. What are the 3 parts of a nucleotide?
5. What are the names of the four base chemicals of DNA?
6. Draw a nucleotide and label the parts.
7. Explain Chargaff's Rule.
8. How did Franklin study the structure of DNA?
9. Describe the structure of DNA.
10. Who first described the structure of DNA?

SECTION 2

11. What is the difference between prokaryotic and eukaryotic cells?
12. Where in the cell is DNA found?
13. In what form is DNA found?
14. Define Chromatin.
15. Define Histones.
16. Describe the structure of a chromosome.
17. Describe the process of DNA replication.

SECTION 3

18. Name three main differences between DNA and RNA.
19. Describe and draw the three main types of RNA and tell their functions.
20. Define Transcription.
21. What are Introns and Extrons and how do they differ?
22. What is the complementary RNA code to this DNA sequence?
AGCCTTAAGGCCTAGC
23. What are the codons for the following amino acids?

Proline	Leucine
Lysine	Serine
Valine	Threonine
Glycine	Methionine
Tyrosine	Alanine

SECTION 4

24. Define and tell the difference between “Point Mutations” and “Frameshift Mutations”
25. Describe four types of Chromosome Mutations.

SECTION 5

26. Define “Operon”.
27. Define “Hox Gene”.
28. What does it mean to “Express” a gene?
29. How do hox genes work?