

## TEST #5 – DNA– STUDY GUIDE

The test will be on Monday, November 23<sup>rd</sup>. Short answer and essay questions should be answered in **complete sentences**, if you fail to do so you will not receive full credit. Use your notes and chapter 12 in the textbook as your source for preparing for the test.

1. Who are the scientists that were important in the discovery of DNA as the genetic material and its structure.
  - What did they do and what did they contribute?
2. What were the advantages of using a virus in the Hershey & Chase experiment?
3. How many chromosomes does a normal human cell have?
4. What is the difference between chromatin and chromosomes? When are they present and why?
5. What is the structure of DNA?
6. What are the monomers of DNA?
7. What is the difference between purines and pyrimidines?
8. Why does a purine always pair with a pyrimidine? How does this ensure DNA's shape?
9. Compare and contrast the DNA of prokaryotes and eukaryotes.
10. What type of bonds hold the two strands of DNA together? Why is that type of bond located there?
11. How long is DNA? How does it fit inside a nucleus?
12. What is DNA replication?
  - What are the steps?
  - What enzymes are associated with this process?
  - When (under what conditions) and why does it take place?
13. Why is DNA replication called semi conservative?

Terms you should know (these always seem like pretty good terms to know for the fill in the blank questions):

Griffith	Nucleotide	Prokaryotes
Avery	Phosphate group	Eukaryotes
Hershey & Chase	Nitrogenous bases	Chromatin
Chargaff	5 carbon sugar	Chromosome
Wilkins	Deoxyribose	Nucleosome
Franklin	Adenine	Histones
Watson & Crick	Guanine	Complementary strands
	Cytosine	Gene
Pneumonia	Thymine	
Bacteriophage	Base pairing rule	** Video: Secret of photo 51
Transformation	Double helix	** Lab: DNA extraction
	Hydrogen bonds	
Genetic information	Purine	
	Pyrimidine	
	Replication	
	Helicase	
	DNA polymerase	
	Ligase	
	Okazaki fragments	
	Replication fork/bubble	
	Enzyme	