Study Guide – DNA Unit Test

DNA Structure and Function, DNA Replication, Cell Cycle, Mitosis, Cancer

1) Understand what DNA stands for, the shape of it, and what type of molecule it is

2) Know the components of a nucleotide and where they are found

* Which component has a slight negative electrical charge?

3) Know the 4 different nitrogenous bases found in DNA

4) Understand “complimentary bases” as well as pyrimidines and purines

* Know how to calculate how much (%) of a given base will be found in a gene when knowing the percentage of one other base (even if it is not the complimentary base).
* Know the shape of a pyrimidine and purines based on a molecular diagram

5) Know the name of the sugar found in DNA and how many carbons it has

6) Know what helicase and DNA polymerase do and how to identify if something is an enzyme or not base on the name.

7) Know the difference between semi-conservative and conservative replication

8) Know the difference between chromatin, chromatids, and chromosomes (double and single stranded) and where along the cell cycle you would find them.

9) Understand cell division for both eukaryotes and prokaryotes (and the other term for prokaryotic cell division) and all the steps involved.

10) Understand what happens during G1, S, G2 phases during the cell cycle (what is the overall term for these three phases?)

* What phase does DNA replicate?
* What phase does the cell lead it’s normal cell life?
* What phase do the cell prep for replication by copying it’s organelles?

11) Understand the difference in cytokinesis in plant and animal cells.

12) What is the definition of mitosis?

13) Be able to identify what stage of mitosis a cell is in by looking at distinguishable photographs.

* Understand how to count the number of chromosomes and chromatids in a cell.

14) List some of the common causes of cancer discussed in class.

15) Know how cancer eventually stops normally functioning cells from doing their jobs correctly and ultimately causing real damage or death to the host.

16) How does a malignant tumor spread? What is the term for this ability?

17) What are the terms for outside influences that have the potential to cause cancer?

18) Know the differences between the different treatments for cancer and what some of the side effects would be.