

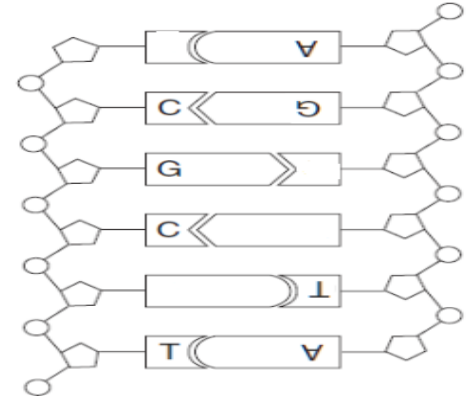
# Expectation Sheet

## DNA & Cell Cycle

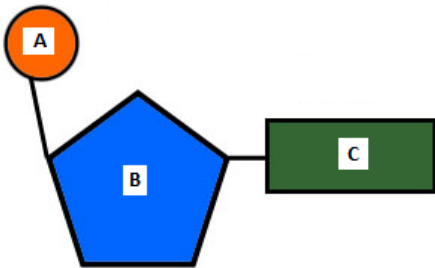
NAME: \_\_\_\_\_

PERIOD \_\_\_\_\_

Look at the DNA strand on the right.



- Fill in the missing bases . . .
  - Circle one nucleotide . . .
  - What type of bond holds these bases together? \_\_\_\_\_
  - How many nucleotides are in this image of DNA? \_\_\_\_\_
  - If there was 26% Adenine, how much thymine would there be? \_\_\_\_\_
  - If there was 20% guanine, how much Cytosine would be present? \_\_\_\_\_
  - If there was 14% guanine, how much thymine would there be? (show your math)
- 
- If there was 24% adenine, how much guanine would there be? (show your math)
- 
- Traits are determined by the genetic code, what part of the DNA actually carries the code? \_\_\_\_\_
  - What is semi conservative DNA? \_\_\_\_\_
  - What is anti-parallel DNA? \_\_\_\_\_
  - Write the complimentary bases for the following strands:  
 3' ATC CGG GCA TTC GCC 5'      5' TTA GTA CCC TAG GGT AAC 3'  
 \_\_\_\_\_
  - What determines what an organism is and their specific traits? \_\_\_\_\_
  - (YES / NO) Does a human and potato have the same DNA molecular parts?
  - (YES / NO) Does a human and a potato have the same nitrogenous base sequence within their DNA?
  - What is the monomer of a DNA molecule? \_\_\_\_\_
  - What is the polymer of a DNA molecule? \_\_\_\_\_



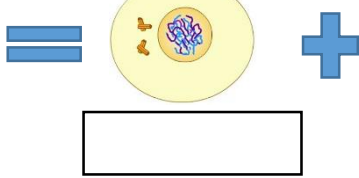
- What is the name of this structure? \_\_\_\_\_
- Name structure A \_\_\_\_\_
- Name structure B \_\_\_\_\_
- Name structure C \_\_\_\_\_
- What is the polymer of this structure? \_\_\_\_\_
- Which part of this structure carries the genetic code  
 \_\_\_\_\_

- What are the four bases possible on a DNA nucleotide?

\_\_\_\_\_

24. Fill in the steps to this cellular process:

**Cell Cycle** =



What happens at the very end of mitosis to split the cells?

25. In which stage does DNA replicate? \_\_\_\_\_

26. What is the longest stage of the cell cycle? \_\_\_\_\_

27. What process is DNA preparing for when it replicates? \_\_\_\_\_

28. Why does DNA replicate before cell division? \_\_\_\_\_

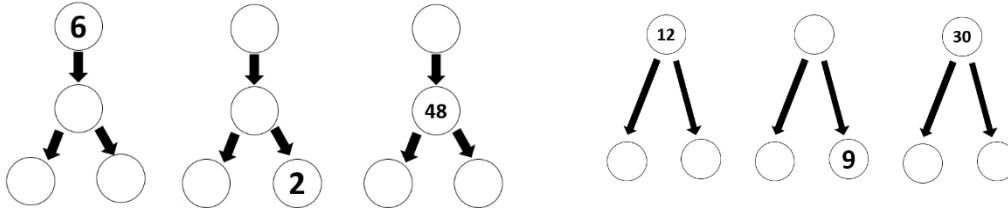
29. Which enzyme unzips DNA? \_\_\_\_\_

30. Which enzyme adds new nucleotides to the original "parent" strands?  
\_\_\_\_\_

31. The end result of replication is \_\_\_\_\_

32. Cancer cells do not enter the Go phase (the resting period), what do they do? \_\_\_\_\_

33. Fill in the chromosomal number for each cellular division if mitosis occurred.

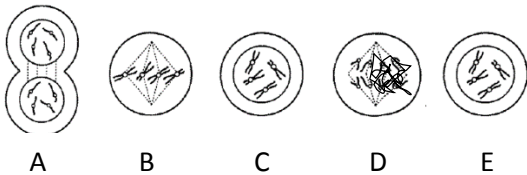


34. How do the daughter cells compare to each other after mitosis? \_\_\_\_\_

35. How do the daughter cells compare to the original cell after mitosis? \_\_\_\_\_

36. How many times did the cell divide during mitosis? \_\_\_\_\_

37. Put the following mitosis phases in the correct order. \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_



38. Circle the Answer that describes what is happening in each of the following stages of the cell cycle:

**Interphase:** DNA is (REPLICATING / UNWINDING / SEPERATING)

**Prophase:** The (RIBOSOMES / CELL MEMBRANES / CHROMATIN) is condensing into chromosomes and the nucleus is (DISAPPEARING / GETTING BIGGER / DOUBLING)

**Metaphase:** The chromosomes are migrating to the (TOP / MIDDLE / BOTTOM)

**Anaphase:** Chromosome get (PULLED APART / PUSHED TOGETHER / DISAPPEAR)

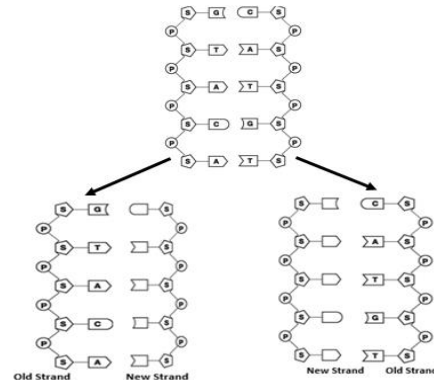
**Telophase:** The cell starts to (GROW BIGGER / DIVIDE / SHRINK) and the nucleus (REAPPEARS / DISAPPEARS)

Use the image to left to answer questions 39-41

39. Circle the "original" strands in the resulting DNA.

40. How do the 2 new DNA strands compare to each other?  
\_\_\_\_\_

41. What is meant by DNA being a "Semi-Conservative" model?  
\_\_\_\_\_



**WHAT TYPE OF CELL ARE THESE?**  
( Cancerous / Noncancerous )