

Study Questions for Chapter 9 from the Text

1. What is a genome? Why is it that proteins are the author's focus in introducing DNA? Of what 4 bases (use first letter of each name) is the DNA code composed?
2. Can you describe Fig. 9.3 in your own words?
3. DNA comes packaged mostly in what objects? The "big picture" on cell division starts with what event? And the next event is what? And the 3rd event is what? (see the bottom of the right hand column of p. 172).
4. Summarize how DNA is replicated. What does the word "chromosome" literally mean? What is chromatin? What is a chromatid? How did it come about?
5. How many total chromosomes are there in a human cell? Are they all different from one another?
6. What is the name of a "matched pair?" Are they absolutely identical? Why are the X and Y chromosomes an exception to the matched-pair rule? What are the other chromosomes in the cell collectively called?
7. What are the 2 separable components of cell division? Define each.
8. What are the 2 main phases of the cell cycle (see Fig. 9.9)? Which is usually the shortest in duration?
9. What are G1, S, G2? What are prophase, metaphase, anaphase and telophase? Describe in your own words the important events of each.
10. What is the definition of cytokinesis? How does it occur in animal cells? What is a "cleavage furrow?"
11. How do plant cells accomplish cytokinesis? Why is it different from the way it occurs in animal cells?
12. Prokaryotic cells also divide - how?
13. What are some of the variations in the frequency of cell division?
14. What is cancer? What does it mean to say "accelerators get stuck" and "brakes fail?" What is apoptosis?

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