

Homework Ch: 11, 12, 13 (worth 15 pts)

Instructions: All answers must be typed on a separate piece of paper unless otherwise indicated.

CHAPTER 11

1. Define the term signal-transduction pathway.
2. How does signaling differ when it is cell-to-cell, between nearby tissues, and distant organs?
3. Describe in detail the three stages of cell signaling giving specific examples.
 - * stage 1—4 types (of receptors): figures 11.6, 11.8, 11.9 and text
 - * stage 2—3 molecules: figures 11.10, 11.12, and 11.14
 - * stage 3—2 types (of responses): figures 11.15 and 11.16
4. How does a cell amplify its response and how does it make sure it is specific (fig. 11.17)?

➔ COMPLETE COLORING SHEETS FOR THESE CHAPTERS ◀

CHAPTER 12

1. List all events (not just DNA) that happen in each phase of Mitosis. (in addition to the assigned reading in the chapter, figure 12.5 may be helpful)
2. By what mechanism do sister chromatids separate during anaphase? Describe the experiment that helped to elucidate this mechanism.
3. Describe the hypothesis of how mitosis in eukaryotes evolved from binary fission.
4. Describe the cell cycle control system; make sure to define checkpoints, protein kinase, phosphorylation, cyclins, Cdks, and MPF.
5. How do internal and external factors control the cell cycle (give an example of each).
6. Define density-dependant inhibition and anchorage dependence and explain what happens to these phenomena in cancer.

CHAPTER 13

1. Describe and contrast the three types of life cycles described in your textbook.
2. List all differences between mitosis and meiosis.
3. Define the major mechanisms of genetic variation due to meiosis (there are at least 3).

☺ Make sure to (at some point) go through the self-quiz at the end of the chapters...they will SAVE you on the next TEST!