Chapter 10: Cell Growth and Division

10-1 Cell Growth
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1. List two reasons why cells divide rather than continue to grow indefinitely.

2. What is the information that controls a cell’s function stored in the nucleus?

3. What is DNA “overload”?

4. Explain why the size of cells is limited.

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5. Define surface area:

6. Describe the surface area to volume ratio of a cell.

7. Relate the size of a cell to the size of the organism itself.

8. The process by which a cell divides into two new daughter cells is called______________________.

9. Each daughter cell has __________ surface area, which allows _______________ of materials with the environment.

10-2 Cell Division
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10. How many chromosomes do each of the following have:
   a. Fruit flies_______
   b. Humans_______
   c. Carrot cells_______

11. When are chromosomes visible in the cell?

12. What is the difference between chromatids and centromeres?

13. Describe what happens during the cell cycle.

14. What are the phases that are used as landmarks?

15. Why are these phases used as landmarks?
16. When the cell copies the chromosomes, it ________________, or makes a
duplicate set of ___________.

17. What activity is happening in the G_1 phase?

18. What occurs during the S phase that is very important?

19. G_2 phase is the preparation for _________________.

20. List the four phases of mitosis.

21. Draw what each phase looks like including: centrioles, spindles and chromosomes
when necessary.

22. Define the following:
   a. Centriole
   b. spindle
   c. chromatid
   d. centromere
   e. cytokinesis

23. In what ways does cytokinesis take place?