

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

## Chapter 5 Concept Review

### B I O L O G Y

**Directions:** Answer the following questions using your notes and textbook

1. The cell cycle is a regular pattern of \_\_\_\_\_, DNA replication, and cell division in \_\_\_\_\_ cells.
2. By end of \_\_\_\_\_ stage, cell nucleus contains two complete sets of \_\_\_\_\_.
3. Mitosis - Division of cell \_\_\_\_\_ and its contents.
4. \_\_\_\_\_ - Process that divides the cell cytoplasm. Two identical daughter cells produced.
5. Prokaryotic cells typically divide much \_\_\_\_\_ than eukaryotic cells.
6. Upper limit due to ratio of cell surface \_\_\_\_\_ to \_\_\_\_\_.
7. As cell grows, its surface area ( \_\_\_\_\_ ) does not grow as fast as volume- too small for adequate exchange of materials.
8. \_\_\_\_\_ - one long continuous thread of DNA.
9. Chromosome looks like "X" (each half is identical DNA- called a \_\_\_\_\_)
10. Sister chromatids held together by \_\_\_\_\_.
11. Mitosis and cytokinesis produce two genetically \_\_\_\_\_ daughter cells.
12. 4 main phases of \_\_\_\_\_.
  - a. \_\_\_\_\_ - DNA condenses into tightly coiled chromosomes. Nuclear envelope breaks down. Centrioles move to poles and spindle fibers form
  - b. \_\_\_\_\_ - Spindle fibers attach to each chromosome. Chromosomes align along cell equator (middle)
  - c. \_\_\_\_\_ - Chromatids separate to opposite sides of cell
  - d. \_\_\_\_\_ - Nuclear membrane starts to form. Chromosomes begin to uncoil and spindle fibers fall apart

13. Cancer - common name for class or diseases characterized by \_\_\_\_\_ cell division.

14. Cancer cells come from normal cells that have suffered \_\_\_\_\_ to genes that make proteins involved in cell division.

15. Sexual reproduction - joining of two specialized cells (\_\_\_\_\_ - egg and sperm), one from each parent.

16. Asexual reproduction - creation of offspring from a \_\_\_\_\_ parent. Offspring genetically \_\_\_\_\_.

17. In environments that don't change, asexual may be better. If they are well suited to environment may be more efficient

18. In changing environments sexual reproduction produces genetic diversity which raises chances for survival

19. Tissue - group of cells that work together to perform a particular function

20. \_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_ → ORGAN SYSTEMS

21. Cell \_\_\_\_\_ - process by which unspecialized cells develop into their mature forms and functions.

22. \_\_\_\_\_ cells can be categorized by their ability or potential to develop into differentiated cell types and different \_\_\_\_\_.

23. Adult Stem Cells - \_\_\_\_\_ undifferentiated cells located among the specialized cells or many organs and tissues.

24. Embryonic Stem Cells - come from donated \_\_\_\_\_ grown in a clinic.

25. Research and Treatment Hope

a. Stem cells have long been used to treat \_\_\_\_\_ and \_\_\_\_\_.

b. Might be used to repair damaged \_\_\_\_\_.

c. Used to cure \_\_\_\_\_ (i.e. diabetes)