

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)