**Test:**

**Growth and Development of Cells**

**Multiple –choice**

Choose the best answer choice to the question.

1. What is cell differentiation?  
 a. A process which allows a seed to sprout and grow.  
 **b. A process by which a less specialized cell matures to a more specialized cell.**  
 c. A process by which more specialized cells become less specialized cells.  
 d. When cells talk to each other.

2. Plant cells contain all of the following EXCEPT:

a. Cell membrane

b. Centrioles

c. Nucleus

d. Vacuoles

3. What two major processes take place during cell division?  
 a. Protein synthesis and DNA replication  
 b. DNA replication and development of chromatids  
 **c. Mitosis and meiosis**  
 d. Mitosis and protein synthesis

4. Which of the following is NOT a type of animal tissue?

1. Connective
2. Muscle
3. Skeletal
4. Nervous

5. Centrioles are responsible for:

a. Propelling the cell throughout the body.

b. Maintaining cell structure and shape.

c. Coordinating cell division.

d. None of the above.

6. Which of the following is not a reason cellular organization is important?

* 1. Living organisms need to do things in order to survive
  2. Cellular organization allows for one organ system to work the hardest at maintaining homeostasis
  3. Different parts of the body take care of chores to keep itself running.
  4. All parts work together in harmony to keep the animal alive.

7. How do cells communicate with each other?  
 a. They send chemical messages through the cell’s wall  
 **b. They send chemical messages to the nucleus of cells**  
 c. They send chemical messages to each other through genes  
 d. They send physical messages to each other

8. How are genes turned “on”?  
 **a. Loosening of DNA strands to allow chemical messages to tell the cell exactly what to do**  
 b. DNA strands tighten and absorb the information from chemical messages  
 c. The nucleus opens up and lets the messages in  
 d. Cell division allows genes to be turned on

9. The actual splitting of the daughter cells into two separate cells is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and occurs differently in both plant and animal cells.  
 a. Cell division  
 **b. Cytokinesis**  
 c. Diploid  
 d. Mitosis

10. Each of the following belongs to only bacteria *except*:

a. Capsule

b. Flagellum

c. Pili

d. Rhibosome

11. A cell that contains two sets of chromosomes:  
 **a. Diploid**  
 b. Haploid  
 c. Chromatid  
 d. Daughter cell

12. What is an example of connective tissue?

1. Bone
2. Striated Muscle
3. Ligament
4. All of the above are examples.

13. A cell that contains one complete set of chromosomes:  
 a. Diploid  
 **b. Haploid**  
 c. Chromatid  
 d. Daughter cell

14. A \_\_\_\_\_\_\_\_ is the basic structural and functional unit of all living organisms.

1. Atom
2. Cell
3. Organelle
4. None of the above

15. Which of the following is the most active tissue in the body?

1. Muscle
2. Epithelial
3. Skeletal

d) Connective

**Short Answer**

Write in the correct term(s) or definition to the following questions.

16. List three examples of specialized cells.

Red blood cells, white blood cells, nerve cells, skin cells, gland cells, sensory receptor cells, bacteria

17. Living cells are divided into two types. What are the two types?

Eukaryotic and prokaryotic cells

18. Explain the difference between “specialized” cells and “unspecialized” cells.  
Specialized: more distinct form and function  
Unspecialized: no distinct form, still in development stage, no specific function

19. Which two cells contain a nucleus, and which one does not?

Plant and animal cells DO contain a nucleus. Bacterial cells DO NOT contain a nucleus.

20. Discuss two differences between mitosis and meiosis.

In mitosis, cells split in two and in meiosis cells, cells split into four.   
Mitosis results in internal organs such as skin, bones, blood, etc. Meiosis results in reproductive cells such as sperm, eggs, etc.)

21. List the phases of mitosis.

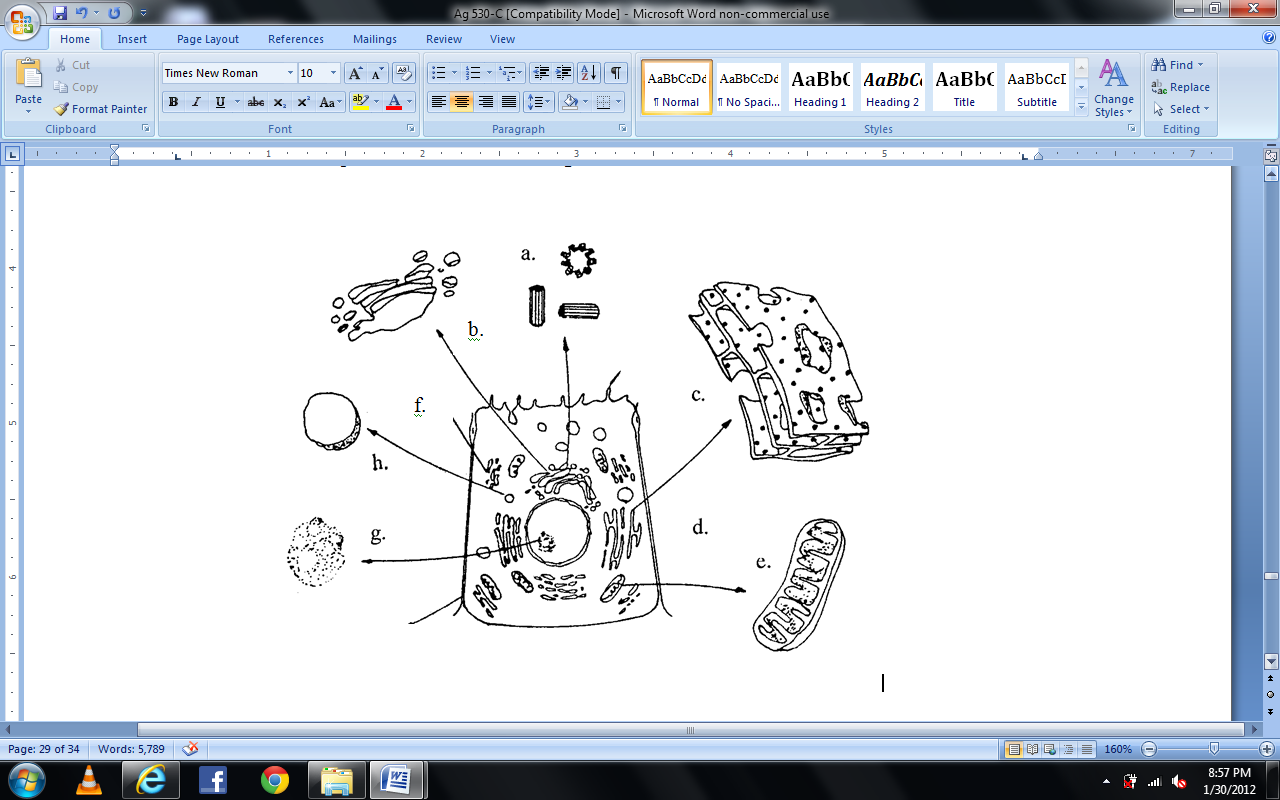
Interphase, prophase, metaphase, anaphase, telephase, cytokinesis

22. List the phases of meiosis I and meiosis II.

Meiosis I phases: interphase, prophase I, metaphase I, anaphase I, telephase I, cytokinesis  
Meiosis II: prophase II, metaphase II, anaphase II, telephase II, cytokinesis

**Labeling**

23. Label the correct parts of the cell on the diagram below.



1. Centrioles
2. Golgi Apparatus
3. Rough Endoplasmic Reticulum
4. Nucleus
5. Mitochondria
6. Smooth Endoplasmic Reticulum
7. Nucleolus
8. Lysome

**True/False**

Determine whether the following statements are true or false and circle the answer. If false, justify why.

24. An example of a prokaryotic cell is a plant or animal cell. **T or F**

a. FALSE: An example of a prokaryotic cell is a bacterial cell.

25. Cardiac muscle can be found on the inner lining of muscle. **T or F**

1. FALSE: This is referring to visceral or smooth muscle.

26. Both animal and plant cells contain a cell wall. **T or F**

a. FALSE: Only bacterial and plant cells contain a cell wall.

27. Cells grouped together to form a tissue are not always identical. **T or F**

28. An atom can only be negatively charged. **T or F**

1. FALSE: An atom may be positively, negatively, or neutrally charged.

29. A cytoplasm is found in a plant, animal and bacterial cell. **T or F**

**Matching**

Match the words in the word bank with the questions below..

Chromosome 30. One of the tiny, threadlike, DNA-containing bodies found in the cell nuclei of all plants and animals, responsible for transmitting hereditary characteristics.

Cell Membrane\_31. The semi permeable membrane that encloses the contents of a cell; plasma membrane

Vacuole 32. A membranous enclosure within a cell that contains substances isolated from the protoplasm, such as dissolved acids

Cytoplasm 33. Fluid Filled Interior of Cell, Suspends cell organelles

Nucleus \_34. Contains genetic information. Controls all cell activities.

Nucleolus 35. Produces the ribosome’s.

Mitochondria 36. Produces cellular energy in the form of ATP

Endoplasmic Reticulum 37. Transport system within the cell, Two types: Rough and Smooth

Golgi Apparatus 38. Collects, packages and modifies cell materials to be used in other parts of the cell or transported out of the cell

Lysosomes 39. Digests and recycles old cell parts.

Word Bank:

Cytoplasm

Endoplasmic Reticulum

Nucleus

Chromosome

Mitochondria

Nucleolus

Cell Membrane

Lysomes

Vacuole

Golgi Apparatus