**Science 9 – Section 5.5 Cell Division Assignment – Value 65 October 4, 2016**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_DUE DATE: October 11, 2016**

1. **FILL IN THE BLANKS** – Using notes/textbook find the missing word(s) for each of the following below. **Value 37**
2. The cell cycle is a series of events or stages that cells go through as they \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. The proper order of the phases of the cell cycle are G1 (growth phase), \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. Cell division consist of two major stages which include the following: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. During the G1 or growth phase the cell \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in cell size and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of new proteins and organelles occurs.
6. During this phase, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the chromosomes are replicated and DNA synthesis takes place.
7. This first stage of cell division, mitosis, is described as the division of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. The second stage of cell division, called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, is described as the division of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
9. Interphase is the period of growth that occurs between cell divisions and includes the following events: \_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_.
10. Genetic information is passed from one generation to the next on structures called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
11. Chromosomes are made of the following two components: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
12. Each chromosome consists of \_\_\_\_\_\_\_\_\_\_\_\_\_ identical sister \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
13. Biologists divide the events of mitosis into four phases. Identify the phases in the correct order. (1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and (4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the name of the phase of mitosis in which chromosomes are visible (shorten and thicken).
15. During this phase of mitosis, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the nuclear membrane begins to fade or dissolve.
16. During this phase of mitosis, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the double stranded chromosomes line up across the center or equatorial plate of the cell.
17. During this phase of mitosis, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the chromosome (or sister chromatids) separate and move to the opposite ends or poles of the cell.
18. Cytokinesis begins during this phase of mitosis. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
19. Cytokinesis is described as \_\_\_\_\_\_\_\_\_\_\_\_\_\_ phase of cell division in which the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ separate into two equal parts to form two identical daughter cells.
20. When the cell membrane during cytokinesis is drawn or pinched inward causing the cytoplasm to pinch in half. The resulting indentation is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
21. Cytokinesis in plant cells forms a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ along the middle, creating two new cells.
22. A normal cell of a pigeon has 80 chromosomes. After the cell has undergone mitosis, one would expect to find \_\_\_\_\_\_\_\_\_\_\_\_\_ chromosomes in each new cell produced.
23. Missing or extra chromosomes after the process of mitosis may cause the following to occur:
24. Cells to form a mutation.
25. Cells to not function properly and die.
26. All of the above.
27. A. Identify each of the following graphics as one of the *four phases of mitosis*. **Value 4**

B. *Label each structure* (as indicated below). **Value 6**

C. Indicate (***below each graphic***) what is occurring in each of the following phases of mitosis. **Value 10**

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D. *Explain how* is plant cell *cytokinesis* difference from animal cell cytokinesis? **Value 4**

E. Draw an example of each type (*plant cell cytokinesis* & *animal cell cytokinesis* ONLY). Label the diagrams you provide below. **Value 4**

Once you have completed all the assignment, review your responses and then place a smiley face below!

**Total Value 65**