**BIOLOGY 12 – ANIMAL VS PLANT CELL CYCLE – SELF TEST – Value 36**

**PART A – Animal Cell – Cell Cycle**

1. Name the ***phases of the cell cycle***: ***interphase***, ***mitosis*** (***Prophase, Metaphase, Anaphase, and Telophase***) and ***cytokinesis*** below. (NOTE: THEY ARE NOT IN THE PROPER ORDER). **Value 6**

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| **ANIMAL CELL CYCLE PHASES** |
| **PHASE NAME:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **PHASE NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **PHASE NAME:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **PHASE NAME:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **PHASE NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | **PHASE NAME:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. For each of the following indicate during which phase; interphase (G1, S, or G2) prophase, metaphase, anaphase, telophase, or cytokinesis do each of the following occur: USE THE DIAGRAMS ABOVE TO AID IN YOUR DECISION - **Value 14**
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - The cell increases in size (period of growth) and synthesizes new proteins and organelles.
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - The replicated centrioles separate and move to the opposite poles or ends of the cell.
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Sister chromatids or chromosomes align or meet at the center or equatorial plate of the cell attached to the spindle fiber.
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Nuclear membrane breaks down or disappears.
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - New nuclear envelopes form around chromosomes that reappears in the two nuclei.
7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - The cell membrane is drawn inward or pinches inward forming a furrow which eventually will divide the cytoplasm.
8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Replicated/duplicated chromosomes becomes visible.
9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Sister chromatids separate into individual chromosomes to opposite ends of the cell.
10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Centrioles align near the newly formed nuclei.
11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Organelles and molecules required for cell division are produced and ready to start mitosis (then cytokinesis).
12. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - As the cell prepares for mitosis, the chromosomes replicates during this phase during the cell cycle.
13. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Spindles (spindle fibers) begins to break down.
14. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - Two identical daughter cells are formed.
15. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - This usually occurs at the same time as telophase.

**PART B – Plant Cell – Cell Cycle**

1. Name the ***phases of the cell cycle***: ***interphase***, ***mitosis*** ***(Prophase, Metaphase, Anaphase, and Telophase)*** and ***cytokinesis*** below. (NOTE: THEY ARE NOT IN THE PROPER ORDER). **Value 6**

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| **PLANT CELL CYCLE** |
| **PHASE NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | **PHASE NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **PHASE NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | **PHASE NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **PHASE NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | **PHASE NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

1. In plants, a structure known as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2 words) forms midway between the divided nuclei and gradually develops into a separating membrane called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2 words). **Value 2**
2. Which phase of mitosis is the longest and most important phase? Why? **Value 2**

**ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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1. Define the following terms: **Value 6**
2. centromere - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. centrosome- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. kinetochore - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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