


Name (s): \_\_\_\_\_

Class: \_\_\_\_\_ Date: \_\_\_\_\_

### LAB ACTIVITY: Exploring Mitosis in Onion Root Cells

#### **Objective:**

To observe real cell samples under a microscope, identify stages of mitosis, count cells in each stage, and calculate time spent in each phase.

 **Introduction:** Mitosis is the process by which a cell divides to produce two genetically identical daughter cells. This process is essential for growth, tissue repair, and development. In this activity, you will use a microscope to observe different phases of mitosis in a stained slide of an onion root tip.

#### **Materials:**

- Microscope
- Prepared slide (onion root tip)
- Lab worksheet
- Calculator
- Pencil

#### **Procedure:**

1. Set up the microscope and place the slide on the stage.
2. Focus the microscope to observe cells clearly.
3. Identify and count the number of cells in each phase of mitosis.
4. Record the data in the table provided.
5. Calculate the time spent in each phase based on your counts.
6. Answer the discussion questions and write your conclusion.

## Results:

Record the number of cells in each phase of mitosis and calculate the time spent in each phase (Assume a total of 720 minutes).

Phase	Number of Cells	% Time Spent (estimated)
Interphase		
Prophase		
Metaphase		
Anaphase		
Telophase		
Total		100%

To calculate:

$$\% \text{ Time} = (\text{Cells in Stage} \div \text{Total Cells}) \times 100\%$$

## Quick Analysis

- (i) Which stage had the highest number of cells?
- (ii) Which stage had the lowest?
- (iii) What might this suggest about the duration of each phase?
- (iv) Why do we use onion root tips to study mitosis?

## Conclusion

In 2–3 sentences, explain how this activity helped you understand the process of mitosis and its importance to living organisms.