**Cell Membrane Permeability Lab Report**  
[Student Name]  
AP Biology

**Objective:**  
To investigate how different solutions affect cell membrane permeability using red onion cells by observing changes in cell structure under a microscope.

**Materials & Methods:**

* **Materials:**
  + Compound microscope
  + Red onion samples
  + Various salt solutions (0%, 5%, 10%)
  + Distilled water
  + Glass slides and coverslips
  + Droppers
  + Paper towels
* **Methods:**
  + Prepare thin slices of red onion epidermis and place them on glass slides.
  + Add a drop of distilled water to one sample as the control group.
  + Add a drop of each salt solution (5% and 10%) to separate samples.
  + Cover with a coverslip and observe under the microscope at high magnification.
  + Record observations, focusing on cell size, shape, and the visibility of the plasma membrane.
  + Rinse and repeat for accuracy.

**Results:**

* **Control (Distilled Water):** Cells remained turgid, with no visible changes in shape or size.
* **5% Salt Solution:** Slight plasmolysis observed, with the cell membrane pulling away from the cell wall in some cells.
* **10% Salt Solution:** Significant plasmolysis, with most cells showing a shrunken membrane and a large central gap.

**Conclusion:**  
The experiment demonstrated that increasing salt concentrations cause water to leave the cells via osmosis, leading to plasmolysis. This highlights the effect of hypertonic environments on cell membrane permeability and cellular structure.