Name_____

Name_____

Name_____Period_____Date_____

Osmosis Lab Prep Worksheet

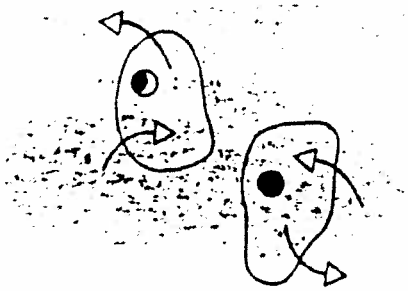
Introduction:

The solute concentration of the environment a cell is placed in can have a dramatic affect on the movement of water across a cell membrane. Water will always move from the area of lower solute concentration (**hypotonic**), to the area of greater solute concentration(**hypertonic**). When a cell is placed in a hypertonic environment it will **plasmolysize** or shrink, due to a loss of water to the environment. Animal cells when placed in a highly hypotonic environment will **cytolysize** due to the rapid increase of pressure within the cell from the influx of water. Plant cells will not cytolysize because of their rigid cell wall. They will continue to have a net gain in the influx of water until the increase in turgor pressure prevents it. Cells placed in an **isotonic** environment gain and lose water at the same rate and are in equilibrium with their environment.

Directions:

Use the information above and the diagrams below to answer the following questions.

ISOTONIC SOLUTION



1. Explain what is happening to the animal cells to the left?

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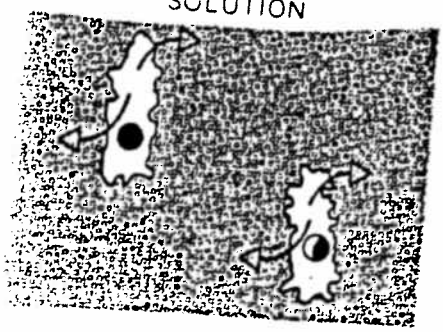
HYPERTONIC SOLUTION



2. What has caused the animal cells to the left to shrink? What is the name of this process?

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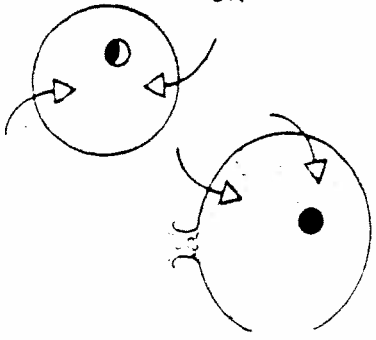
HYPOTONIC SOLUTION



3. What has happened to the animal cells to the left in this diagram? What is the name of this process?

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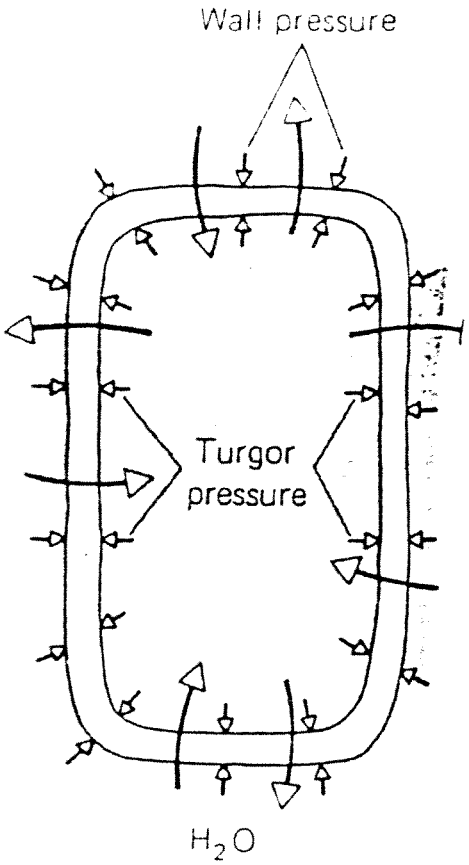
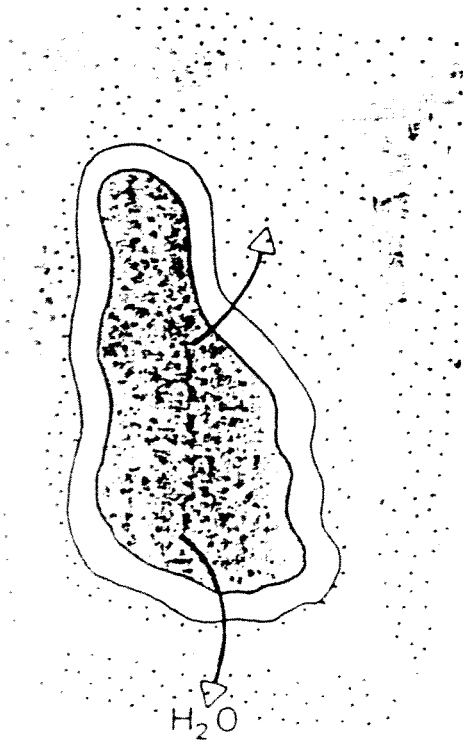
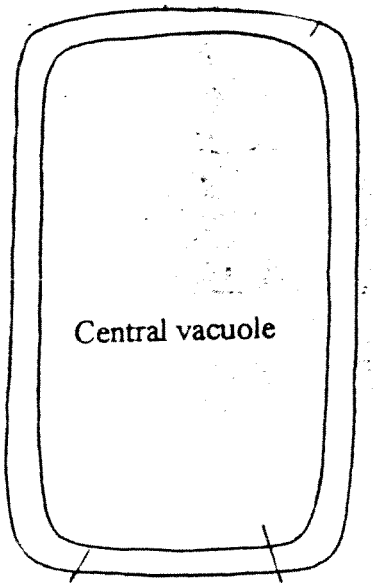


HYPERTONIC SOLUTION



Isotonic Solution



4. Why does the plant cell to the left not burst? What has happened to the turgor pressure within the cell?

5. Why is the plant cell to the left in equilibrium? What can you say about the net flow of water in and out of the cell?

6. Why has the cell membrane of the plant cell to the left collapsed? What is the name of this process?