NEATH PORT TALBOT COLLEGE
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School of Maths & Science
Science Practical

Osmosis using Visking tubing

◆ Aim

To understand the movement of water molecules during osmosis.

◆ Introduction

Homeostasis is the process that maintains the body's internal environment within optimal limits so that the body can function as effectively as possible. The retention or loss of too much fluid will have significant adverse effects on the workings of the human body. Osmosis is the movement of water molecules from an area of high water concentration to an area of low water concentration and is one mechanism the body uses to maintain constant water levels.

◆ Safety

Control Measures

- The wearing of **safety goggles** and a **laboratory coat** at all times will be sufficient to take account of most hazards and significant risks.
- Take care when handling and clamping glassware.

◆ Procedure

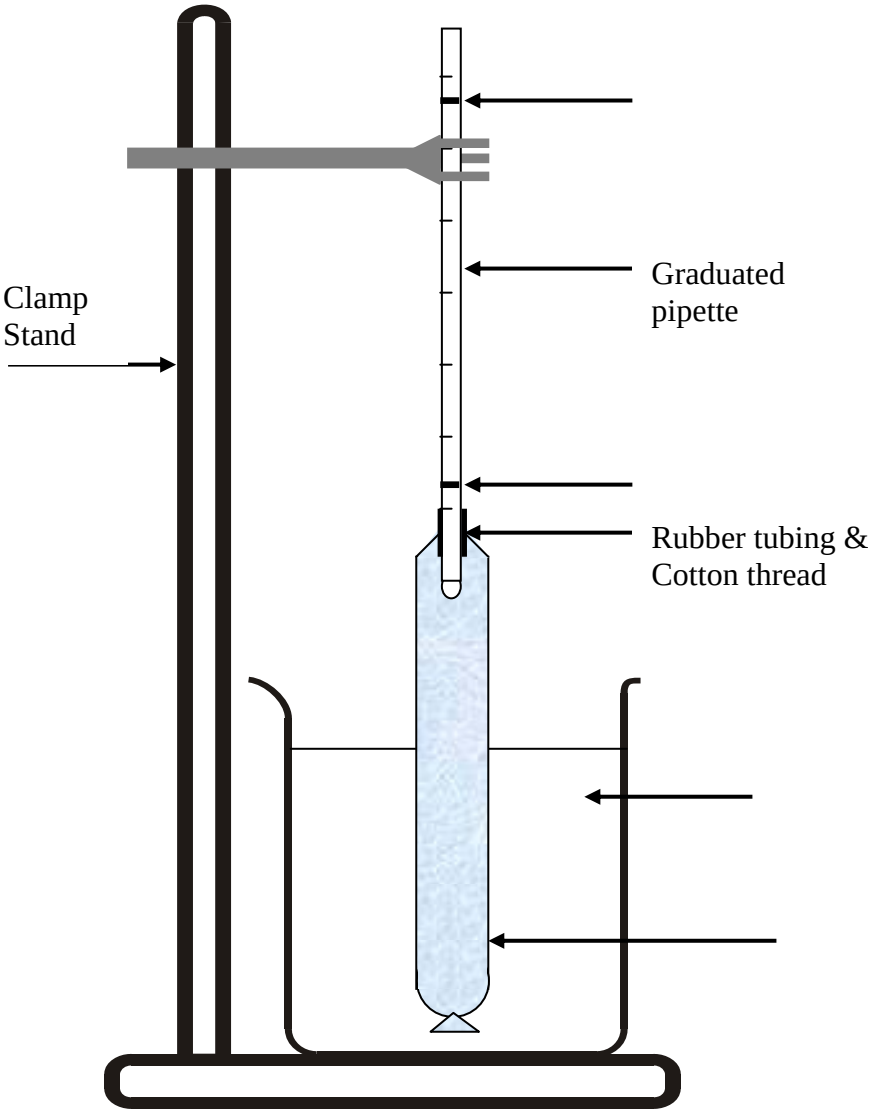
1. Soak the visking tubing in water to soften and tie a knot at one end of it.

2. Fix a short length of rubber tubing to the end of a graduated pipette.

3. Fill the visking tubing with a concentrated sugar solution and fix the open end onto the base of the graduated pipette.

4. Tie the joint firmly with cotton thread and insert the tubing into a beaker of water and leave for 1 hour.

5. Mark the initial and final level of solution in the pipette.



Add the following labels to your diagram:-

Sugar solution, water, semi permeable membrane, initial level, final level.

1. Why is it important to secure the visking tubing firmly?

Results

1. What is the original height of the sugar solution?

2. What is the final height of the sugar solution?

Conclusion

1. Why is there a change in the levels of sugar solution?

2. What force is responsible for this change?

3. What would happen if you left the experiment for a further 6 hours?

4. What would happen if you left the experiment indefinitely?

5. Where is there a region of **High Water Concentration?**

6. Where is there a region of **Low Water Concentration?**