

## LABORATORY EXERCISE 6 MOVEMENTS THROUGH MEMBRANES

### Instructional Suggestion

Instead of using human blood for Procedure C, you may want to substitute some other type of animal blood obtained from a meat packing house, a veterinarian, or a biological supplier. The hemolysis experiment, using RBCs from a safe source, demonstrates concepts of osmosis, tonicity, and membrane characteristics.

### Laboratory Report Answers

#### **PART A**

1. (experimental results)
2. (experimental results)
3. Answers will vary.
4. Simple diffusion is the movement of a substance from an area of higher concentration to an area of lower concentration as a result of molecular motion.



#### Critical Thinking Application Answers

1. Yes
2. Yes
3. No
4. No
5. Yes

#### **PART B**

1. Answers will vary.
2. Answers will vary.
3. Water entered the thistle tube through the membrane, thus increasing the volume of liquid in the tube as a result of osmosis.
4. Osmosis is the movement of water molecules from an area of higher concentration to an area of lower concentration through a selectively permeable membrane.



#### Critical Thinking Application Answers

1. Yes
2. Yes
3. No
4. Yes
5. Yes

#### **PART C**

1. (sketches)
2. Tube 3. There was a net movement of water out of the cells.
3. Tube 1. There was a net movement of water into the cells.
4. Tube 2. There was no net movement of water into or out of the cells.

#### **PART D**

1. Water, glucose, and starch.
2. The tests for glucose and starch were positive.
3. Gravity
4. Charcoal
5. Pore in the filter paper were too small.
6. Filtration is the movement of substances through a membrane as a result of hydrostatic pressure that is greater on one side of the membrane than on the other side.



#### Critical Thinking Application Answers

1. No
2. Yes
3. No
4. No
5. Yes