

1. Explain **concentration gradient** and **diffusion** with a picture or diagram. Also write a real-life example of **diffusion**.
  
2. Discuss the similarities and differences between **diffusion** and **osmosis**.
  
3. What would happen to a cell if placed in the following solutions (describe and illustrate).
  - a. **Isotonic** solution:
  
  - b. **Hypotonic** solution:
  
  - c. **Hypertonic** solution:
  
4. Draw an arrow in the direction of **osmosis** for each of the conditions below. Assume the membrane is not **permeable** to sucrose.
  
5. Intravenous solutions must be prepared so that they are **isotonic** to red blood cells. A 0.9 % salt solution is **isotonic** to red blood cells.
  - a. Explain what will happen to a red blood cell placed in a solution of 99.3% water and 0.7% salt.
  
  - b. Explain what would happen to a red blood cell placed in a solution of 90% water and 10% salt.