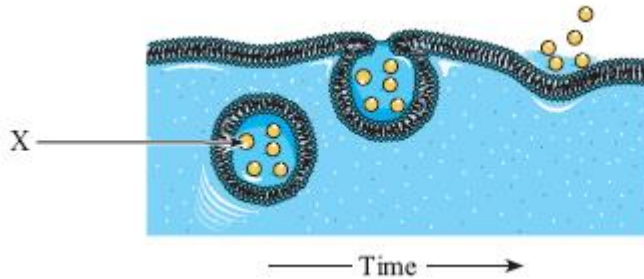


**CH. 4 TRANSPORT ACROSS THE MEMBRANE**  
**PRACTICE QUESTIONS**

1. Which property of a neutral fat allows it to diffuse through the cell membrane?
  - A. the size of the molecule
  - B. the non-polar characteristic of the molecule
  - C. the presence of glycoproteins in the cell membrane
  - D. the presence of protein carriers in the cell membrane

**Use the following diagram to answer question 2.**



2. Molecule **X** could be which of the following?
  - A. hormones
  - B. glucose
  - C. hemoglobin
  - D. potassium ions
3. Cholesterol molecules are synthesized in liver cells and packaged as LDLs (low-density lipoproteins). The LDLs are released into the blood. Which of the following is the process by which LDLs re-enter body cells from the blood?
  - A. osmosis
  - B. exocytosis
  - C. endocytosis
  - D. facilitated diffusion
4. Describe what would happen in the following situations; Keep in mind that red blood cells have an internal NaCl concentration of 0.9%. (4 marks)

- a. A red blood cell is placed in a 1.3% solution of NaCl.

---

---

---

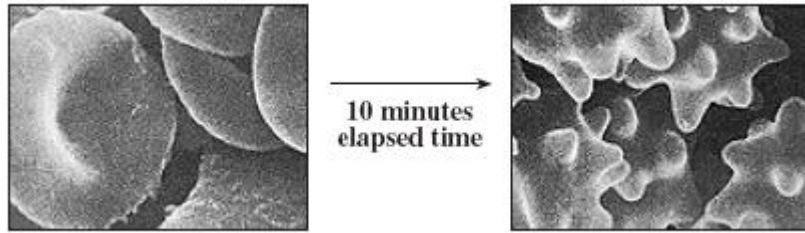
- b. A red blood cell is placed in a 0.4% solution of NaCl.

---

---

---

Use the following diagram to answer question 5



5. Red blood cells are added to a salt solution in a beaker. (1 marks)

a) Into what type of solution were the red blood cells placed?

---

6. How do molecules like glucose and amino acids cross the membrane?  
Why is this so? (3 marks)

---

---

---

7. How do gases, like  $O_2$  and  $CO_2$  cross the membrane? (1 mark)

---

---

---

8. How do large molecules like proteins cross the membrane? (1 mark)

---

---

---

9. Describe four functions of proteins in the cell membrane. (4 marks)

---

---

---

---

10. An integral membrane protein must be composed of amino acids that interact with the phospholipids in order to span the membrane. What types of amino acids would be found in the different areas of the protein? (2 marks)

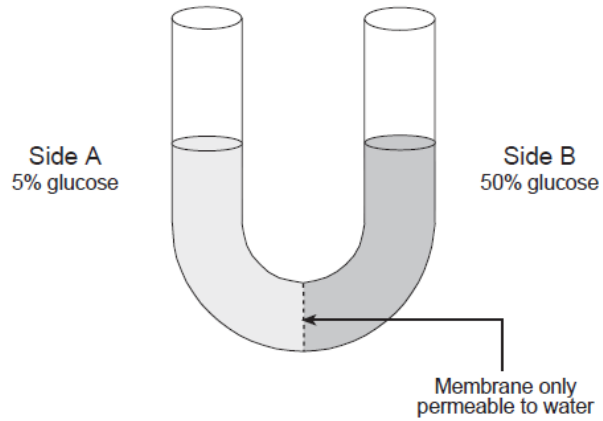
---

---

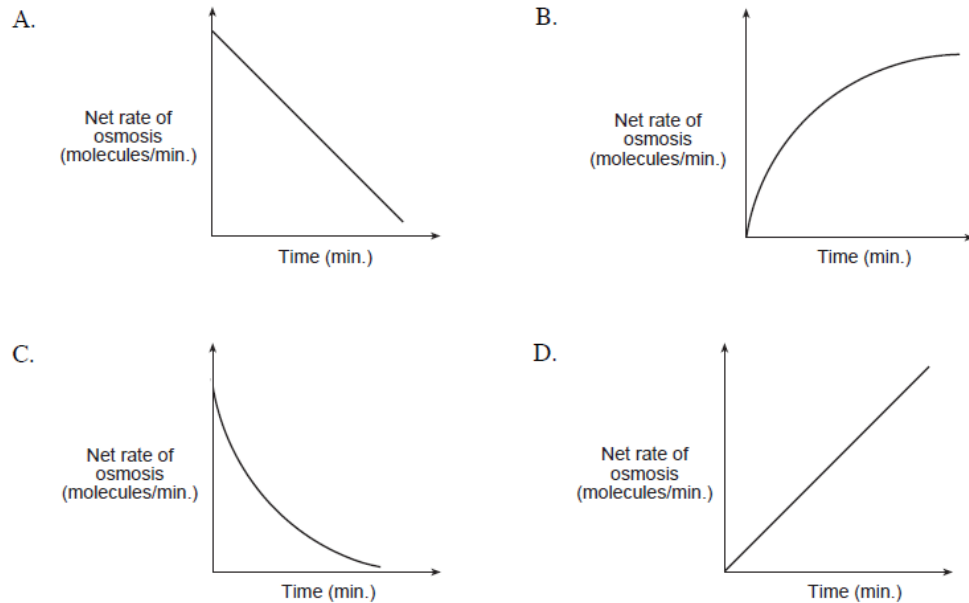
---

---

Use the following diagram to answer question 19.



19. The diagram above represents the initial conditions of an experiment. Which of the following graphs most accurately represents the change in the net rate of osmosis over time?



20. What happens when a cell is placed in a hypotonic solution?

- A. The cell swells.
- B. The cell shrinks.
- C. The cell metabolizes faster.
- D. There is no effect on the cell's volume.

18. Which of the following processes requires ATP?

- A. osmosis
- B. protein synthesis
- C. facilitated transport
- D. diffusion of oxygen

