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 (lowdensity 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 O₂ and CO₂ 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

- 21. Which of the following is a function of proteins in the cell membrane?
 - A. to provide receptors for specific hormones
 - B. to maintain the fluid nature of the membrane
 - C. to provide a hydrophobic end that repels water
 - D. to provide a channel for fats to move into the cell
- 22. Which of the following is an example of active transport?
 - A. carbon dioxide moving into the blood from the tissues
 - B. potassium ions moving back into the cytoplasm of a neuron
 - C. oxygen moving out of the alveoli into the pulmonary capillaries
 - D. water moving into cells when they are placed in a hypotonic solution
- 18. Facilitated transport may be described as the movement of particles from an area of
 - A. low to high concentration using protein carriers.
 - B. low to high concentration without using protein carriers.
 - C. high to low concentration using protein carriers.
 - D. high to low concentration without using protein carriers.

17. Water molecules passing through the cell membrane is an example of which of the following?

- A. osmosis
- B. exocytosis
- C. active transport
- D. facilitated transport

Compare active transport and facilitated diffusion.

(4 marks)