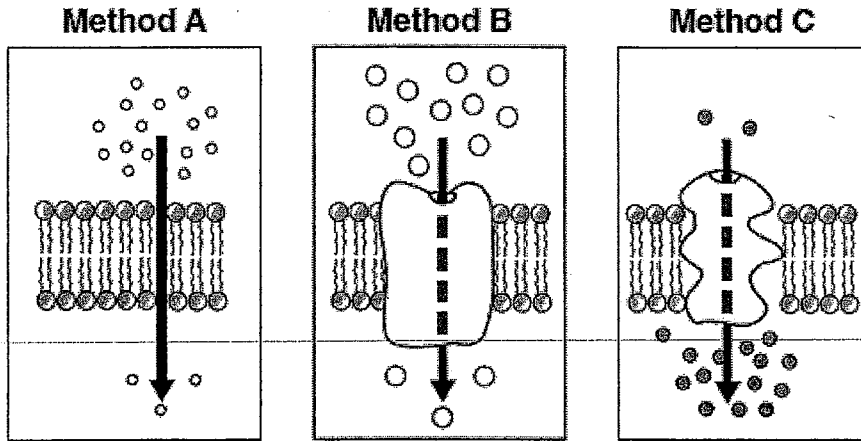


Key

Transport Review Questions

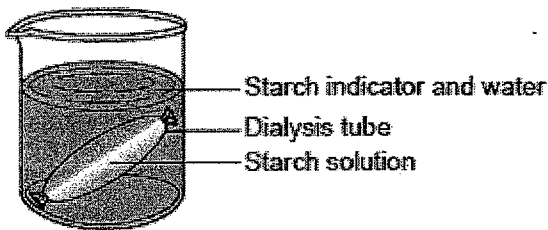
1. Base your answer to the following question on the diagram below and on your knowledge of biology. The diagram represents three sections of a cell membrane showing three different methods involved in the transport of various molecules across the membrane.



Methods A and B are classified as methods of passive transport because they do not require

- A) ATP B) carbon dioxide C) light D) DNA

Base your answers to questions 2 and 3 on the diagram below and on your knowledge of biology. The diagram represents an experimental setup.



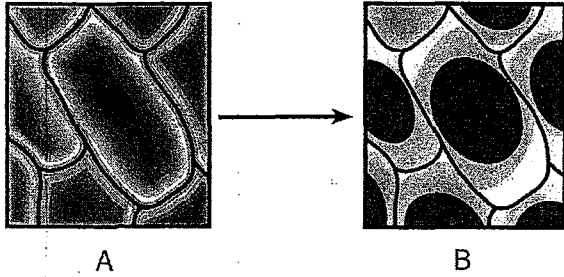
2. Which term correctly identifies the process by which molecules move through the dialysis tube membrane?

- A) paper chromatography B) active transport
C) diffusion D) digestion

3. Which statement best describes what would most likely be observed after 20 minutes?

- A) The content of the dialysis tube would turn blue-black.
B) The liquid in the beaker would turn blue-black.
C) The dialysis tube would burst.
D) There would be no change visible.

4. Red onion cells undergo the change represented in the diagram below.



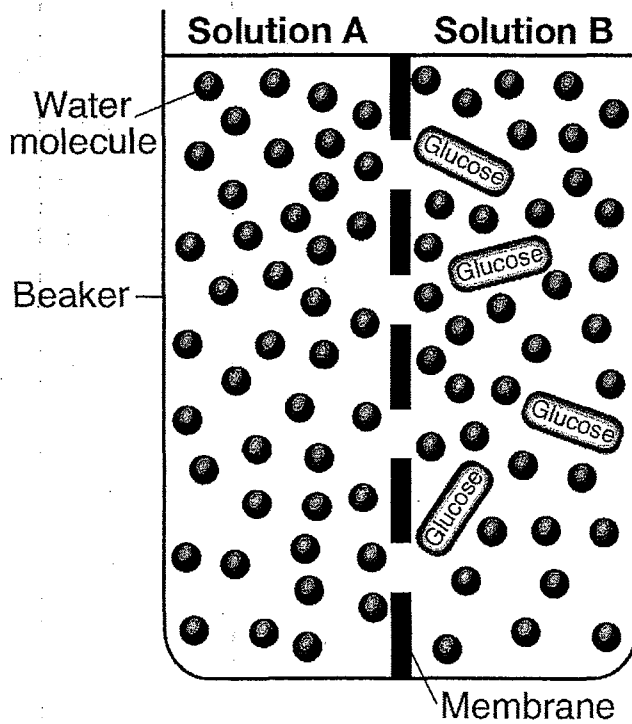
A

B

B This change is most likely caused by the cell being transferred from

- A) distilled water to starch indicator
- B) distilled water to salt water
- C) salt water to tap water
- D) salt water to distilled water

Base your answers to questions 5 and 6 on the diagram below and on your knowledge of biology. The diagram represents two solutions, *A* and *B*, separated by a selectively permeable membrane.



5. Which statement best describes the outcome after 20 minutes?

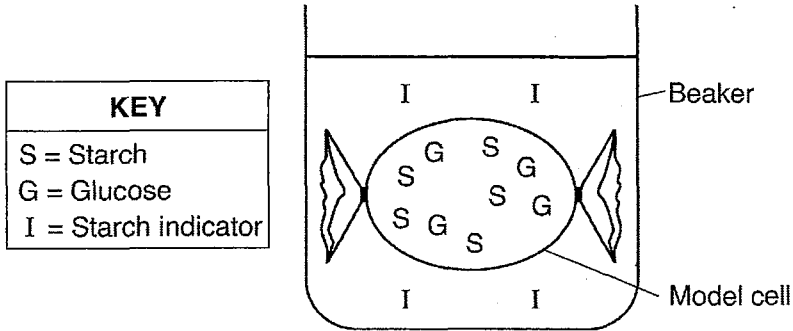
- A**
- A) Solution *A* will contain approximately the same number of glucose molecules as solution *B*.
 - B) Solution *A* will contain all of the water molecules.
 - C) Solution *B* will remain unchanged.
 - D) Solution *B* will lose all of the glucose molecules to solution *A*.

6. A sample from solution *A* and solution *B* were each tested with blue-colored glucose indicator solution before the solutions were placed in the beaker. Which row represents the results?

Row	Solution A	Solution B
(1)	red or orange	blue
(2)	blue black	amber
(3)	blue	red or orange
(4)	amber	blue black

- A) 1 B) 2 C) 3 D) 4

7. Base your answer to the following question on the diagram below and on your knowledge of biology. The diagram represents a model cell setup. The locations of three different substances are indicated in the diagram.

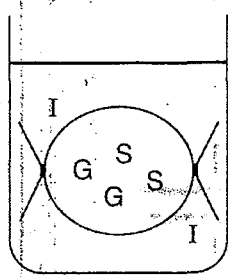


Which row in the chart below best explains the movement of some molecules between the model cell and the solution in the beaker?

Row	Direction of Flow of Molecules	Energy Use
(1)	from high to low concentration	without using cellular energy
(2)	from high to low concentration	using cellular energy
(3)	from low to high concentration	without using cellular energy
(4)	from low to high concentration	using cellular energy

- A) 1 B) 2 C) 3 D) 4

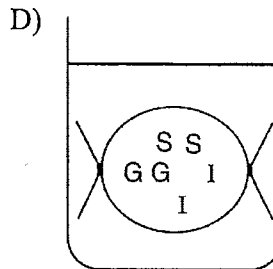
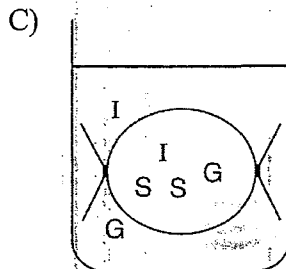
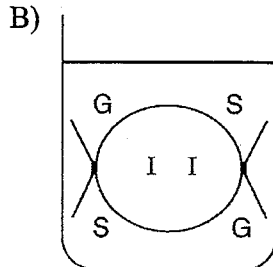
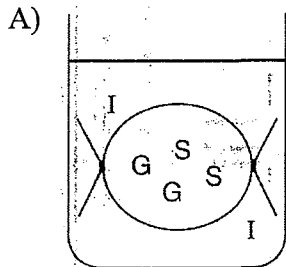
8. A model cell setup is represented in the "Initial State" diagram below.



Initial state

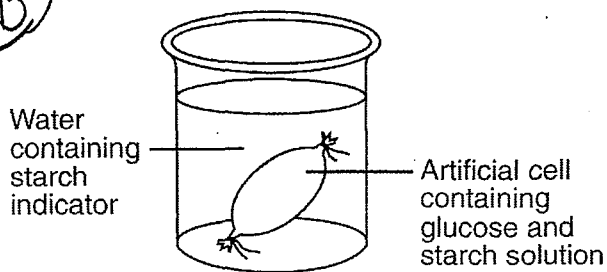
Key	
S	= starch
G	= glucose
I	= starch indicator

C Which diagram indicates the area where each of these substances would be located after 20 minutes?



9. Base your answer to the following question on the laboratory setup illustrated below and on your knowledge of biology.

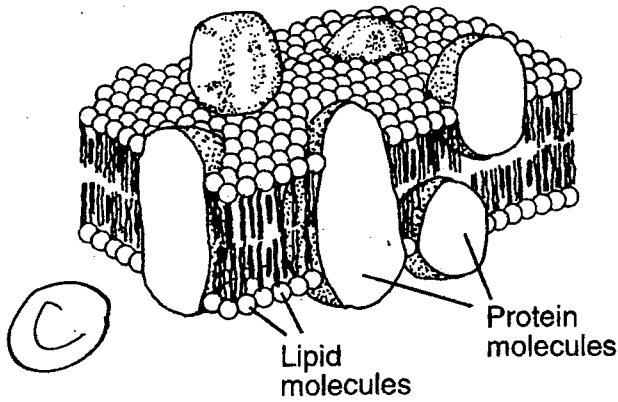
B



After two hours, the color of the liquid in the beaker did *not* change. This shows that

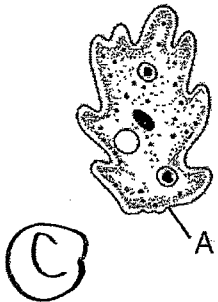
- A) glucose moved from the artificial cell into the beaker
- B) starch did not pass out of the artificial cell
- C) starch was digested to glucose in the artificial cell
- D) glucose molecules combined to produce starch in the artificial cell

10. Which cell structure is represented by the three-dimensional diagram below?



- A) chloroplast
- B) mitochondrion
- C) cell membrane
- D) replicated chromosome

11. The ameba represented in the diagram below is a single-celled organism.



Which two processes are most closely associated with structure A?

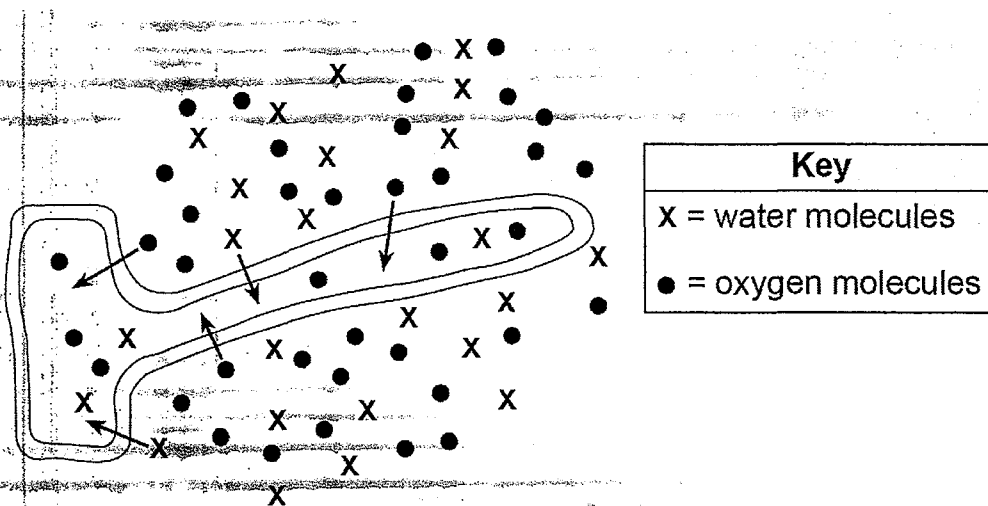
- A) insertion and deletion
- B) nervous regulation and circulation
- C) active transport and diffusion
- D) replication and photosynthesis

12. Which molecule will most likely diffuse through a cell membrane?

- A) starch
- B) water
- C) protein
- D) DNA

B

13. The diagram below represents a specialized cell located in the root of a plant. The arrows in the diagram indicate the movement of molecules of oxygen and water into the cell.



Which row in the chart below correctly identifies the process responsible for the movement of each type of molecule represented in the diagram?

Row	Water	Oxygen
(1)	diffusion	active transport
(2)	diffusion	diffusion
(3)	active transport	diffusion
(4)	active transport	active transport

A) 1

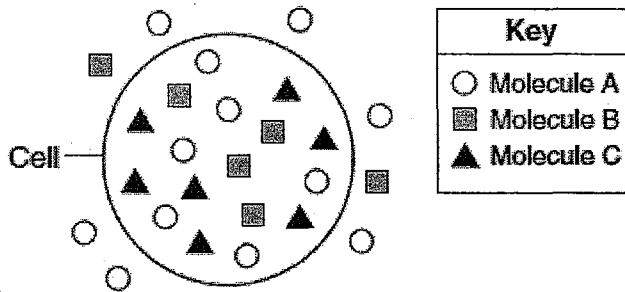
B) 2

C) 3

D) 4

(B)

14. The diagram below represents a cell and several molecules. The number of molecules shown represents the relative concentration of the molecules inside and outside of the cell.



Molecule B could enter the cell as a direct result of

- A) digestion
 B) diffusion
 C) active transport
 D) enzyme production
15. Molecule X moves across a cell membrane by diffusion. Which row in the chart below best indicates the relationship between the relative concentrations of molecule X and the use of ATP for diffusion?

Row	Movement of Molecule X	Use of ATP
(1)	high concentration → low concentration	used
(2)	high concentration → low concentration	not used
(3)	low concentration → high concentration	used
(4)	low concentration → high concentration	not used

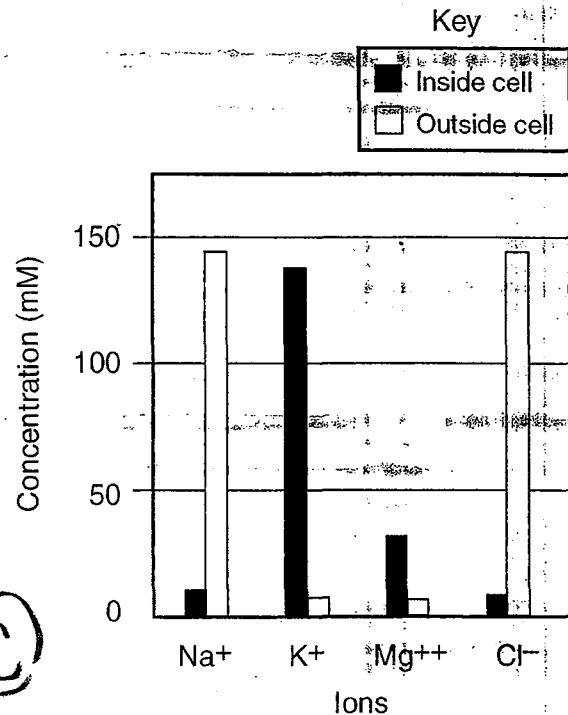
- A) 1 B) 2 C) 3 D) 4

16. Which row in the chart below best describes the active transport of molecule X through a cell membrane?

Row	Movement of Molecule X	ATP
(1)	high concentration → low concentration	used
(2)	high concentration → low concentration	not used
(3)	low concentration → high concentration	used
(4)	low concentration → high concentration	not used

- A) 1 B) 2 C) 3 D) 4

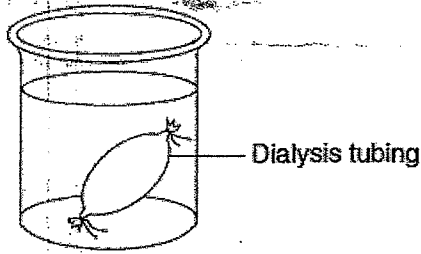
17. The graph below shows the relative concentrations of different ions inside and outside of an animal cell.



Which process is directly responsible for the net movement of K⁺ and Mg⁺⁺ into the animal cell?

- A) electrophoresis B) diffusion
 C) active transport D) circulation

18. An experimental setup using a model cell is shown in the diagram below.

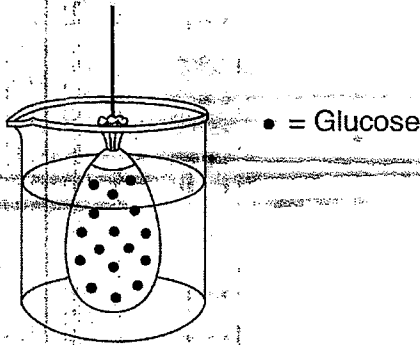


State what cell structure the dialysis tubing represents.

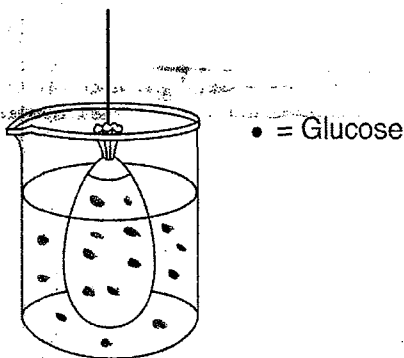
The cell membrane

Base your answers to questions 19 and 20 on the information below and on your knowledge of biology.

An artificial cell filled with a glucose solution was placed in a beaker of water, as represented below. The beaker was left undisturbed for 20 minutes.



19. In the diagram below, draw in the expected location of the glucose molecules after 20 minutes.



20. If both glucose and starch were added to the artificial cell, where would the starch be located after 20 minutes?

Still inside the cell. Starch cannot diffuse through a cell membrane.