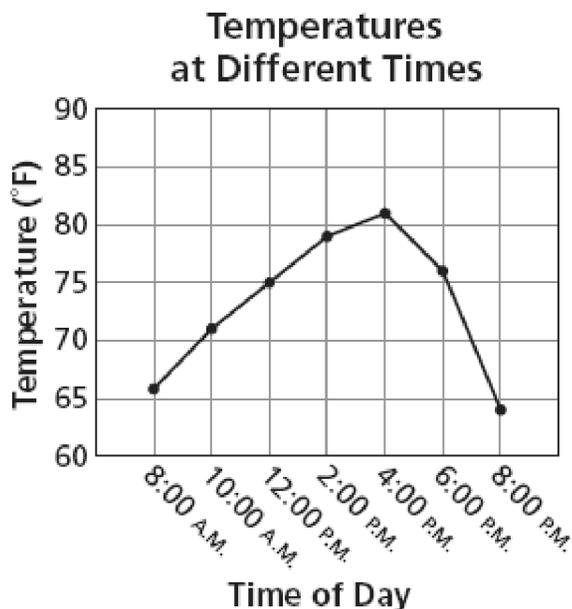


Name: _____

Date: _____

1. On Monday, students predicted how the temperatures would compare at different times of the day. The graph below shows the measurements the students took to test the predictions.

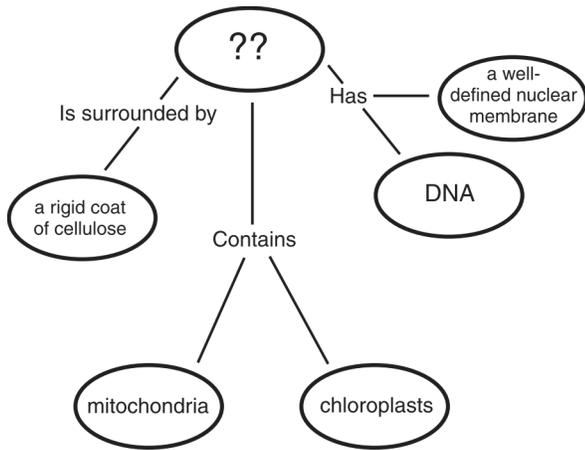


Which prediction is supported by the results in the graph?

- A. The temperature will be higher at 12:00 P.M. than at 2:00 P.M.
 - B. The temperature will be higher at 6:00 P.M. than at 10:00 A.M.
 - C. The temperature will be higher at 12:00 P.M. than at 6:00 P.M.
 - D. The temperature will be higher at 10:00 A.M. than at 2:00 P.M.
2. Why do eukaryotic cells require mitochondria?
- A. to break down cell debris for recycling
 - B. to control division for cell reproduction
 - C. to release stored energy for cell activities
 - D. to package materials inside cells for transport

3. Which structure is outside the nucleus of a cell and contains DNA?
- A. chromosome
 - B. gene
 - C. mitochondrion
 - D. vacuole
4. Which of the following organelles releases energy from sugars?
- A. ribosomes
 - B. vacuoles
 - C. chloroplasts
 - D. mitochondria
5. Which of the following lacks a nucleus?
- A. a plant cell
 - B. an animal cell
 - C. an amoeba
 - D. a virus
6. The cell membrane of the red blood cell will allow water, oxygen, carbon dioxide, and glucose to pass through. Because other substances are blocked from entering, this membrane is called
- A. perforated.
 - B. semi-permeable.
 - C. non-conductive.
 - D. permeable.

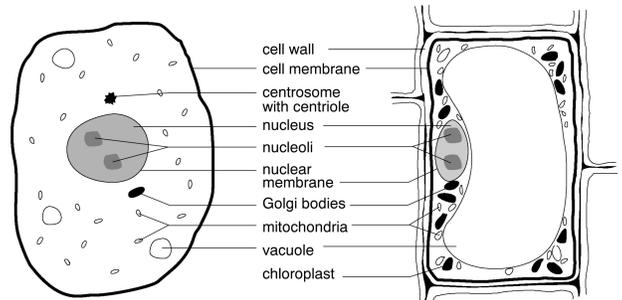
7.



Which of these *best* completes this concept map?

- A. an animal cell B. a prokaryotic cell
 C. a virus D. a plant cell
8. Eukaryotic cells are differentiated from prokaryotic cells because eukaryotic cells
- A. are much smaller.
 B. have permeable membranes.
 C. have a higher rate of reproduction.
 D. have nuclei.
9. Which cellular organelle is responsible for packaging the proteins that the cell secretes?
- A. cytoskeleton B. cell membrane
 C. lysosome D. Golgi apparatus
10. A cell from heart muscle would *probably* have an unusually high proportion of
- A. lysosomes. B. mitochondria.
 C. mRNA. D. Golgi bodies.

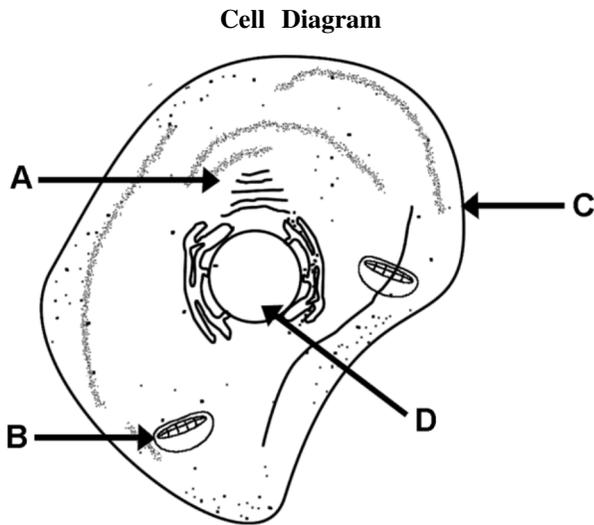
11. Which statement about plant and animal cells is true?
- A. Plant cells have a nucleus and a cell wall; animal cells do not have either of these structures.
 B. Plant cells have a cell wall and chloroplasts; animal cells do not have either of these structures.
 C. Plant cells have a cell wall and a cell membrane; animal cells have a cell wall but not a cell membrane.
 D. Plant cells have chloroplasts and mitochondria; animal cells have chloroplasts but do not have mitochondria.
12. Which structure is responsible for allowing materials into and out of an animal cell?
- A. Nucleus B. Cell wall
 C. Mitochondrion D. Cell membrane
13. In a cell with a high energy requirement, which organelles are found in a high concentration?
- A. Chromosomes B. Lysosomes
 C. Mitochondria D. Vacuoles
14. Use the diagrams below of an animal cell and a plant cell to answer the following question.



Features of plant cells that clearly make them different from animal cells are

- A. a larger nucleus and fewer chromosomes.
 B. a rigid cell wall and chloroplasts.
 C. more cytoplasm and smaller vacuoles.
 D. a changing size and indefinite shape.

15. Use the diagram to answer the question .



Which arrow indicates the location of the cell membrane?

- A. arrow A
- B. arrow B
- C. arrow C
- D. arrow D

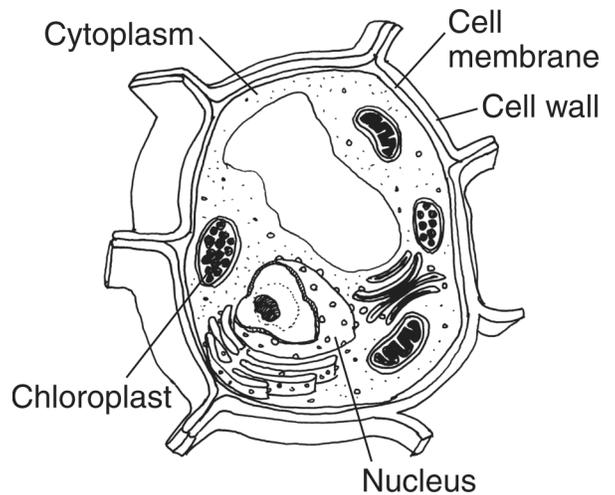
16. The starch and water molecules in potato cells are stored in what organelle?

- A. mitochondrion
- B. nucleus
- C. ribosome
- D. vacuole

17. Which cellular organelle uses oxygen and glucose to provide energy to the cell?

- A. mitochondrion
- B. nucleus
- C. ribosome
- D. vacuole

18. The diagram below shows a cell.



Where would this cell *most likely* be found?

- A. bark
- B. frog
- C. leaf
- D. mushroom

19. What are the basic structural units of living organisms?

- A. cells
- B. nuclei
- C. organs
- D. tissues

20. Which of the following structures is not present in animal cells?

- A. cell membrane
- B. cell wall
- C. mitochondrion
- D. nucleus

21. Substances enter any plant or animal cell by passing through which of the following structures?

- A. nucleus
- B. cell membrane
- C. vacuole
- D. chloroplast

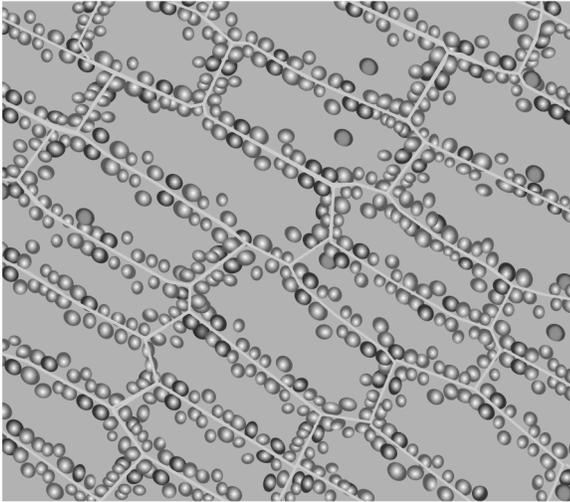
22. How is a skin cell from a mouse similar to an amoeba?

- A. Both need energy.
- B. Both have cell walls.
- C. Both move with pseudopodia.
- D. Both consume carbon dioxide.

23. A student prepared the following list of characteristics about a cellular organelle.
- present in animal cells
 - present in plant cells
 - helps make energy available to the cell

Which of the following cellular structures is the student describing?

- A. cell wall B. chloroplast
C. mitochondrion D. nucleus
24. A biology student observed the cells shown below under a microscope.



These cells *most likely* came from

- A. an animal. B. an archaebacterium.
C. a fungus. D. a plant.
25. A cell has a defect that results in the loss of its ability to regulate the passage of water, food, and wastes into and out of the cell. In which of the following cell structures is this defect *most likely* to be located?
- A. ribosomes
B. chloroplasts
C. cell membrane
D. endoplasmic reticulum

26. Many animals have internal or external skeletons that provide support and structure. Which of the following parts of plant cells play a similar role?

- A. cell membranes B. cell walls
C. chloroplasts D. cytoplasm

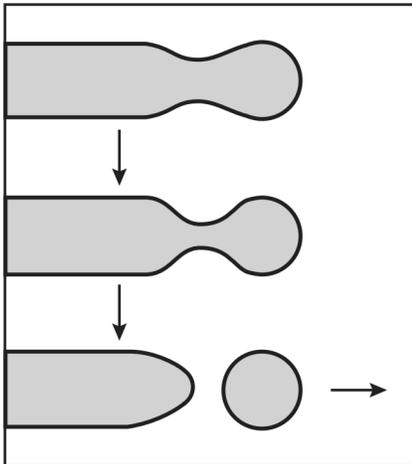
27. Some cells, such as human nerve and muscle cells, contain many more mitochondria than do other cells, such as skin cells. Why do some cells have more mitochondria than others?

- A. The cells use more energy.
B. The cells store more nutrients.
C. The cells degrade more proteins.
D. The cells divide more frequently.

28. A single prokaryotic cell can divide several times in an hour. Few eukaryotic cells can divide as quickly. Which of the following statements *best* explains this difference?

- A. Eukaryotic cells are smaller than prokaryotic cells.
B. Eukaryotic cells have less DNA than prokaryotic cells.
C. Eukaryotic cells have more cell walls than prokaryotic cells.
D. Eukaryotic cells are more structurally complex than prokaryotic cells.

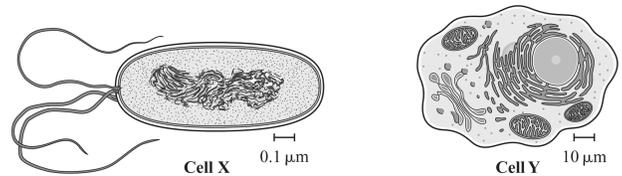
29. A cross section of part of a Golgi complex is shown below.



Part of the membrane of the Golgi complex pinches off and moves away. Which of the following is a function of this process?

- A. to release energy from ATP
- B. to deliver proteins to other locations in the cell
- C. to collect amino acids for use in protein synthesis
- D. to send messages about cell requirements to the nucleus
30. Which of the following is a main function of the cell wall?
- A. to store carbohydrates for later use
- B. to give the cell a rigid structure
- C. to package proteins for export
- D. to carry out photosynthesis
31. Which of the following statements correctly matches a cell part with its function?
- A. The cell membrane packages lipids for export.
- B. The mitochondria perform photosynthesis.
- C. The lysosome digests molecules.
- D. The nucleus produces energy

32. The illustrations below represent two different cells.

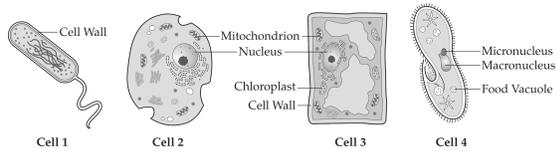


Which of the following statements *best* identifies these two cells?

- A. Cell X is a prokaryotic cell and cell Y is a eukaryotic cell.
- B. Cell X is an archae cell and cell Y is a eubacterial cell.
- C. Cell X is a red blood cell and cell Y is a muscle cell.
- D. Cell X is a plant cell and cell Y is an animal cell.
33. In a cell, which of the following organelles *most likely* contains digestive enzymes?
- A. centriole B. chloroplast
- C. lysosome D. ribosome
34. If a cell's lysosomes were damaged, which of the following would *most likely* occur?
- A. The cell would produce more proteins than it needs.
- B. The cell would have chloroplasts that appear yellow rather than green.
- C. The cell would be less able to break down molecules in its cytoplasm.
- D. The cell would be less able to regulate the amount of fluid in its cytoplasm.

35. Use the information and the diagrams below to answer the following question(s).

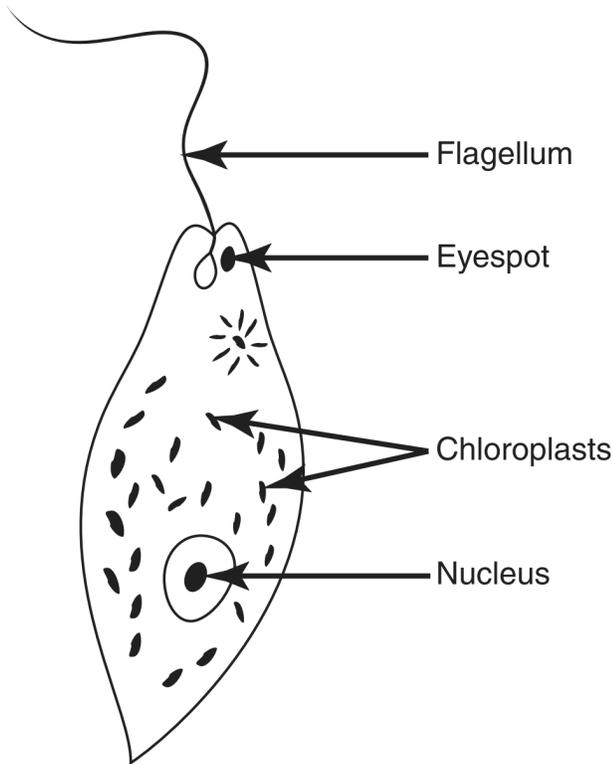
A student observed different types of cells under a microscope. Four of the cells he observed are shown below.



Cell 4 has many hair-like structures that it uses for movement. What are these structures called?

- A. cilia
- B. flagella
- C. vacuoles
- D. pseudopodia

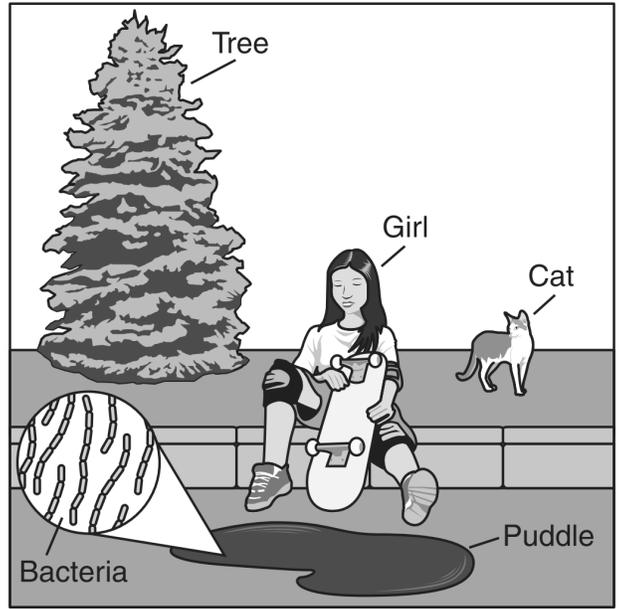
36. Organisms that have physical features common to both plants and animals are difficult to classify. The diagram below shows physical features of a *euglena*.



Which *euglena* feature caused some scientists to classify the *euglena* as a plant?

- A. chloroplast
- B. eyespot
- C. flagellum
- D. nucleus

37. Several organisms are shown in the picture below.



Which organism in the picture is a single-celled organism?

- A. tree
- B. bacteria
- C. girl
- D. cat

38. Which organism has only one cell?

A.



Grasshopper

B.



Paramecium

C.



Mushroom

D.



Tree

39. Which cell structure contains molecules that direct cell activities?

A. nucleus

B. ribosome

C. mitochondrion

D. chloroplast

40. Some cells have many short, hairlike structures on their surfaces. These structures are used *mainly* for

A. cell movement

B. DNA replication

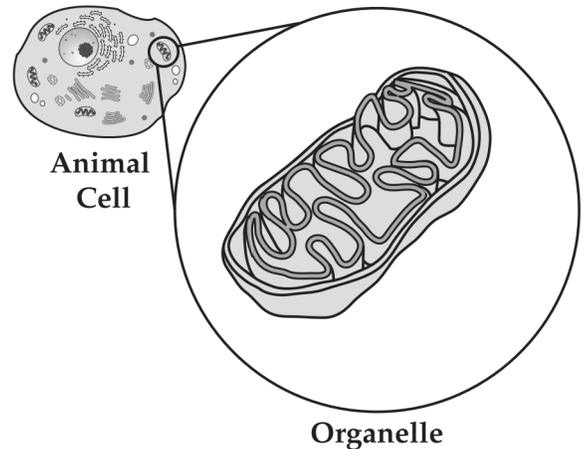
C. energy production

D. waste removal

41. Use the information and diagram below to answer the following question(s).

Animal cells contain an organelle that helps release energy. A diagram of this organelle is shown below.

ANIMAL CELL DIAGRAM



What is the organelle described?

A. chloroplast

B. mitochondrion

C. nucleus

D. ribosome

42. A cell is observed through a microscope. The cell is found to have a cell wall, a cell membrane, and numerous ribosomes. The cell does not have a nucleus. This cell is *most likely* from a

A. bacterium

B. fungus

C. plant

D. protist

43. Prokaryotic cells possess all of the following *except*

A. cell membrane

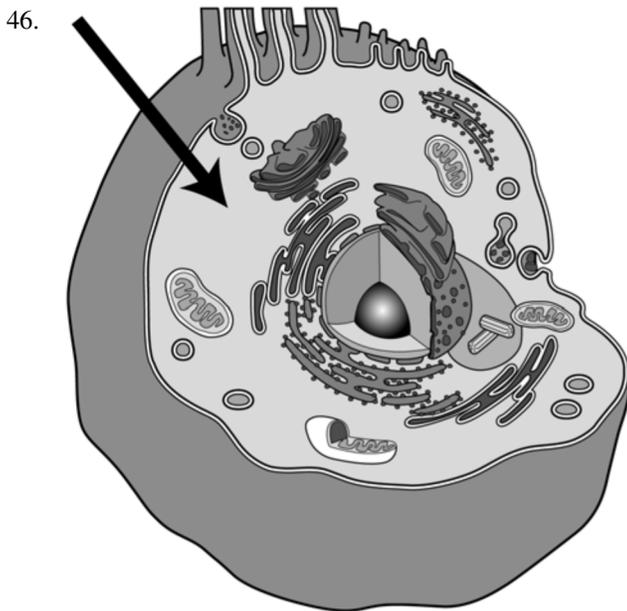
B. ribosomes

C. cell wall

D. nuclear membrane

44. Which of these describes how the absence of mitochondria would affect a cell?
- A. Heat would build up and cause the cell to become dehydrated because mitochondria release energy.
 - B. Toxins would collect and slow the production of ATP because mitochondria remove waste from cells.
 - C. Cells would be unable to undergo cellular respiration because mitochondria convert glucose into energy.
 - D. Cells would be unable to undergo fermentation because mitochondria convert carbohydrates into sugars.

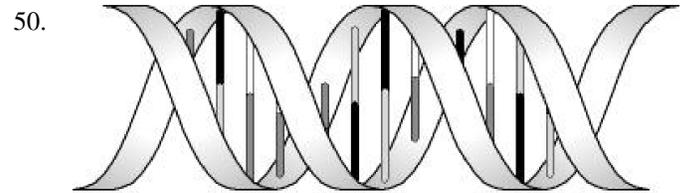
45. Some ribosomes float freely in the cytoplasm, while others are attached to the—
- A. Golgi bodies.
 - B. endoplasmic reticulum.
 - C. chromosomes
 - D. nucleus.



The part of the cell marked by the arrow is the—

- A. cytoplasm.
- B. chloroplast.
- C. mitochondrion.
- D. chlorophyll.

47. What structure could a cellular organism use to move through its environment?
- A. Flagellum
 - B. Cell wall
 - C. Mitochondrion
 - D. Lysosome
48. The part of a eukaryotic cell that allows it to remain separate from the outside environment is the—
- A. cell membrane.
 - B. ribosome.
 - C. cytoplasm.
 - D. Golgi vesicles.
49. Animal cells maintain their shape by having—
- A. cytoskeletons.
 - B. cell walls.
 - C. cytoplasm.
 - D. chromosomes.



The structure shown above is found in what part of a eukaryotic cell?

- A. Cytoplasm
- B. Nucleus
- C. Golgi apparatus
- D. Smooth endoplasmic reticulum

51. Which of the cells characterized in the chart below is a prokaryotic cell?

	Ribosome	Cell Wall	Chloroplast	Nuclear Membrane	Plasma Membrane
Cell A	✓	✓	✓	✓	✓
Cell B	✓			✓	✓
Cell C	✓	✓			✓
Cell D	✓	✓		✓	✓

A. Cell A B. Cell B C. Cell C D. Cell D

52. Which is the *most likely* function of a group of cells that contains a high number of chloroplasts?

A. respiration B. transpiration
C. fermentation D. photosynthesis

53. Which is an example of a single-celled organism?

A. amoeba B. insect
C. fish D. worm

54. Which statement *best* describes a bacterial cell?

A. It contains more than one cell.
B. It is a complete organism.
C. It is part of a larger organism.
D. It contains different kinds of cells.

55. Placing wilted lettuce in cold water will make it crisp again. Which statement *best* describes what happens to restore the lettuce to its original condition?

A. Water left the lettuce cells by diffusion.
B. Water entered the cells of the lettuce by osmosis.
C. Osmosis caused salts to enter the lettuce cells.
D. Salts in the leaf caused water to leave the cells.

56. How is the cell membrane important to the process of osmosis?

A. It allows water to move into the cell.
B. It allows all materials from the outside environment to move into the cell.
C. It traps water and nutrients that would otherwise be unable to move into the cell.
D. It collects nutrients from water in the outside environment and moves them into the cell.

57. What is the function of the selectively permeable plasma membrane?

A. to store chemical and heat energy inside the cell
B. to control the movement of substances into and out of the cell
C. to control the movement of red blood cells

58. Which cell process will move substances against a concentration gradient?

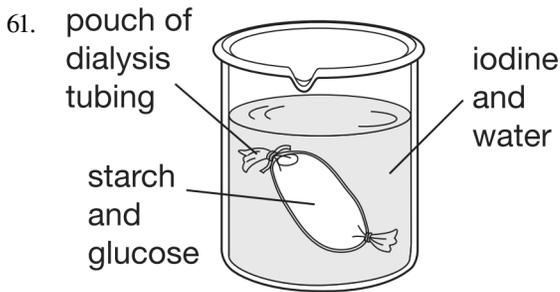
A. diffusion B. facilitated diffusion
C. osmosis D. active transport

59. Which is an example of osmosis?

A. potassium ions moving in and out of an animal cell
B. carbon dioxide moving into the leaf cells of a plant
C. oxygen moving into the bloodstream from the lungs
D. water moving into the root cells of a plant

60. The process of diffusion occurs when

A. all molecular movement stops.
B. molecules move from areas of lesser concentration to areas of greater concentration.
C. sugar molecules move into a cell.
D. molecules move from areas of greater concentration to areas of lesser concentration.



Initial Conditions

Inside Dialysis Tubing	Inside Beaker
starch	iodine
glucose	water
solution is colorless	solution is brown

Final Conditions

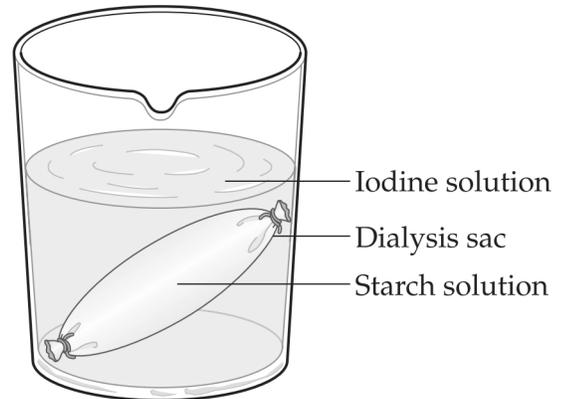
Inside Dialysis Tubing	Inside Beaker
starch	iodine
glucose	water
iodine	solution is brown
solution is blue/black	

Students use a pouch of dialysis tubing to model a cell membrane. A starch and glucose solution is placed inside the pouch, and the pouch is placed into a beaker that contains iodine and water. An advantage of using the dialysis tubing to represent a cell membrane is that it is

- A. permeable to all substances.
 - B. impermeable to all substances.
 - C. permeable to iodine and impermeable to starch.
 - D. impermeable to iodine and permeable to starch.
62. Molecules can cross cell membranes from areas of low concentration to areas of high concentration by binding with carrier proteins. What is this process called?
- A. osmosis
 - B. endocytosis
 - C. active transport
 - D. facilitated diffusion

63. Use the information and the diagram below to answer the following question(s).

Starch turns blue-black in the presence of iodine solution. A selectively permeable dialysis sac containing a starch solution is placed into a beaker of iodine solution.

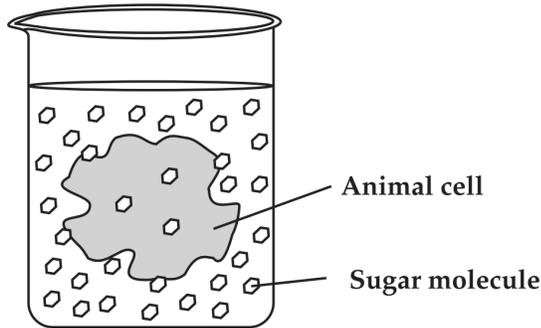


If the dialysis sac is permeable *only* to water and iodine, what will the solutions in the beaker and the sac look like after two hours?

- A. The iodine solution in the beaker will turn blue-black; the starch solution will not change.
 - B. The starch solution in the dialysis sac will turn blue-black; the iodine solution will not change.
 - C. Neither solution will turn blue-black.
 - D. Both solutions will turn blue-black.
64. Which of these processes is demonstrated by the experiment shown in the diagram?
- A. cellular respiration
 - B. active transport
 - C. endocytosis
 - D. diffusion
65. Which of these substances moves across cell membranes by osmosis?
- A. salt
 - B. sugar
 - C. water
 - D. protein

66. The diagram below shows an animal cell in a beaker containing a solution of sugar and water. The cell membrane is permeable only to water.

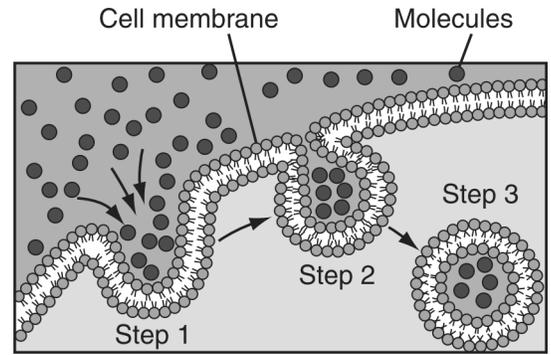
ANIMAL CELL IN SUGAR AND WATER SOLUTION



Which statement describes the relationship between the animal cell and the contents of the beaker?

- A. There is a higher concentration of water inside the cell than outside the cell.
- B. There is a higher concentration of sugar inside the cell than outside the cell.
- C. There is an equal concentration of water inside the cell as outside the cell.
- D. There is an equal concentration of sugar inside the cell as outside the cell.

67. A cellular process is shown in three steps in the diagram below.



Which process is illustrated?

- A. diffusion of water into a cell
- B. production of protein from amino acids
- C. active transport of molecules across a membrane
- D. asexual reproduction by cell division

Topic 3: Cells 3/8/2018

- | | | | |
|---------|---|---------|---|
| 1. | | 21. | |
| Answer: | B | Answer: | B |
| 2. | | 22. | |
| Answer: | C | Answer: | A |
| 3. | | 23. | |
| Answer: | C | Answer: | C |
| 4. | | 24. | |
| Answer: | D | Answer: | D |
| 5. | | 25. | |
| Answer: | D | Answer: | C |
| 6. | | 26. | |
| Answer: | B | Answer: | B |
| 7. | | 27. | |
| Answer: | D | Answer: | A |
| 8. | | 28. | |
| Answer: | D | Answer: | D |
| 9. | | 29. | |
| Answer: | D | Answer: | B |
| 10. | | 30. | |
| Answer: | B | Answer: | B |
| 11. | | 31. | |
| Answer: | | Answer: | C |
| 12. | | 32. | |
| Answer: | D | Answer: | A |
| 13. | | 33. | |
| Answer: | C | Answer: | C |
| 14. | | 34. | |
| Answer: | B | Answer: | C |
| 15. | | 35. | |
| Answer: | C | Answer: | A |
| 16. | | 36. | |
| Answer: | D | Answer: | A |
| 17. | | 37. | |
| Answer: | A | Answer: | B |
| 18. | | 38. | |
| Answer: | C | Answer: | B |
| 19. | | 39. | |
| Answer: | A | Answer: | A |
| 20. | | 40. | |
| Answer: | B | Answer: | A |

41.
Answer: B

42.
Answer: A

43.
Answer: D

44.
Answer: C

45.
Answer: B

46.
Answer: A

47.
Answer: A

48.
Answer: A

49.
Answer: A

50.
Answer: B

51.
Answer: C

52.
Answer: D

53.
Answer: A

54.
Answer: B

55.
Answer: B

56.
Answer: A

57.
Answer: B

58.
Answer: D

59.
Answer: D

60.
Answer: D

61.
Answer: C

62.
Answer: C

63.
Answer: B

64.
Answer: D

65.
Answer: C

66.
Answer: A

67.
Answer: C