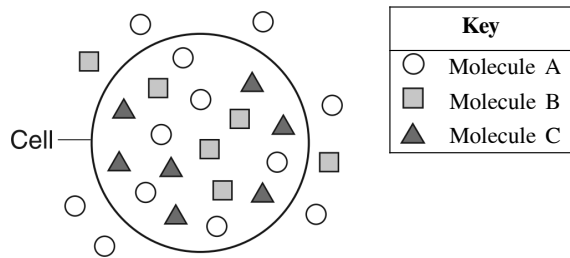


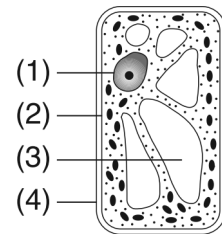
1. The diagram below represents a cell and several molecules. The number of molecules shown represents the relative concentration of the molecules inside and outside of the cell.



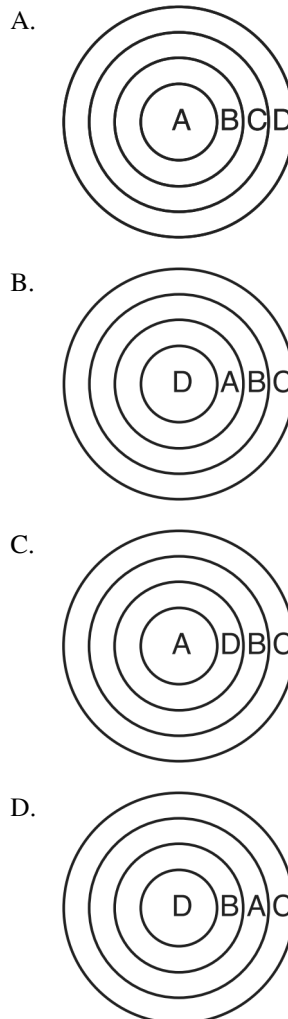
Molecule B could enter the cell as a direct result of

- A. digestion                      B. diffusion  
 C. active transport              D. enzyme production
2. A pesticide that kills an insect by interfering with the production of proteins in the insect would most directly affect the activity of
- A. ribosomes                      B. minerals  
 C. chloroplasts                  D. mitochondria
3. Which substance can enter a cell by diffusion without having to be digested?
- A. water                              B. protein  
 C. starch                              D. fat
4. A substance is most likely to diffuse into a cell when
- A. it is a large organic food molecule such as protein or starch  
 B. it is enclosed in an organelle such as a vacuole  
 C. the concentration of the substance is greater outside the cell than inside  
 D. the pH of the substance is greater than the pH of the cell
5. In a DNA sample, 15% of the bases are thymine (T). What percentage of the bases in this sample are adenine (A)?
- A. 15%    B. 30%    C. 35%    D. 85%
6. Within which structure of an animal cell does DNA replication take place?
- A. vacuole                              B. cell membrane  
 C. nucleus                              D. ribosome

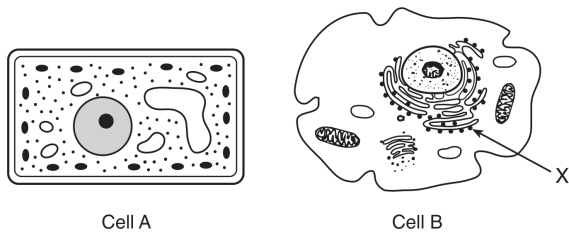
7. What is the main function of a vacuole in a cell?
- A. storage  
 B. coordination  
 C. synthesis of molecules  
 D. release of energy
8. Which cell structure contains information needed for protein synthesis?



- A. 1                      B. 2                      C. 3                      D. 4
9. Which diagram best represents the relative locations of the structures in the list below?
- A—chromosome  
 B—nucleus  
 C—cell  
 D—gene



10. Base your answer(s) to the following question(s) on the diagrams below and on your knowledge of biology. The diagrams represent two different cells and some of their parts. The diagrams are not drawn to scale.

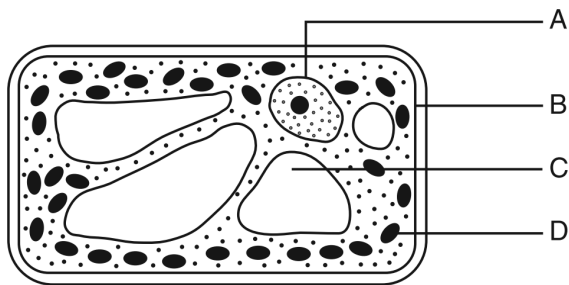


Identify the organelle labeled X in cell B.

11. Which organelle is correctly paired with its specific function?

- A. cell membrane—storage of hereditary information
- B. chloroplast—transport of materials
- C. ribosome—synthesis of proteins
- D. vacuole—production of ATP

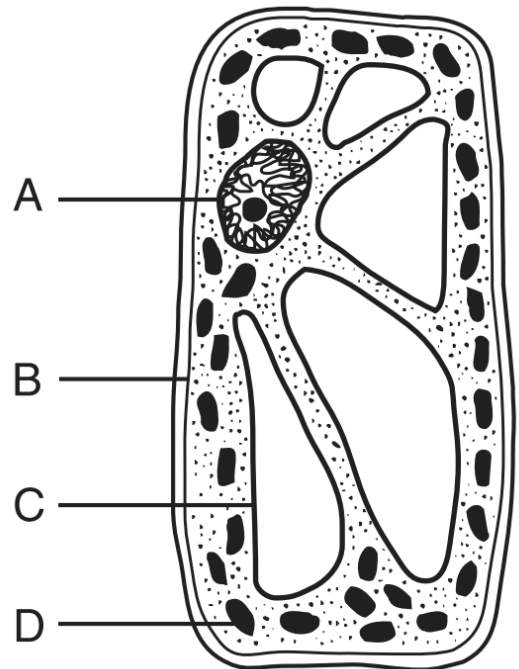
12. The cell represented below produces oxygen.



Which structure allows the passage of this oxygen to the environment?

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

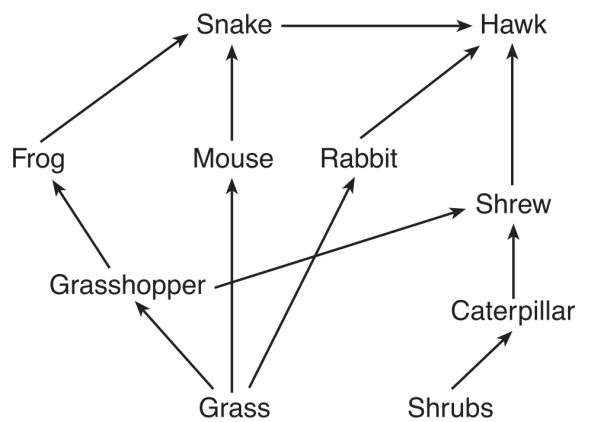
13. The diagram below represents a cell of a green plant.



Solar energy is used to produce energy-rich compounds in structure

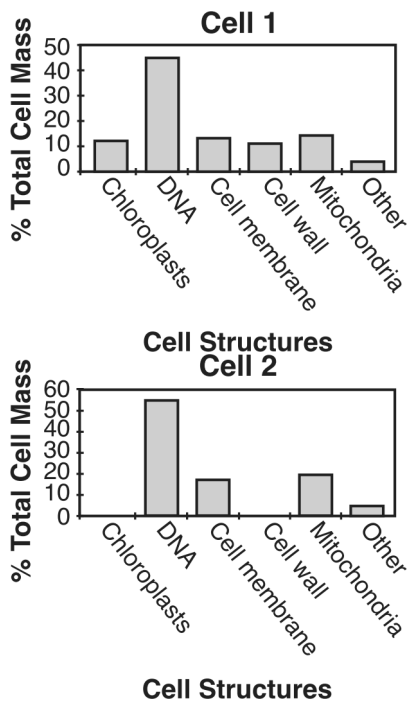
- A. A
- B. B
- C. C
- D. D

14. Base your answer(s) to the following question(s) on the diagram below that shows some interactions between several organisms located in a meadow environment and on your knowledge of biology.



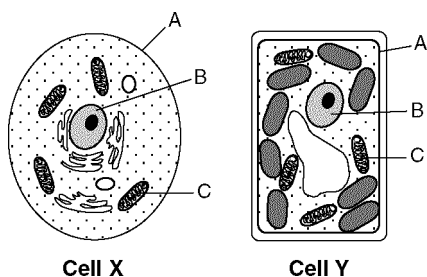
Identify *one* cell structure found in a producer in this meadow ecosystem that is not found in the carnivores.

15. Data from two different cells are shown in the graphs below.



Which cell is most likely a plant cell? Support your answer.

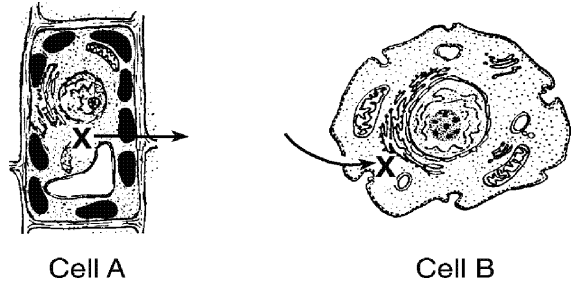
16. The largest amount of DNA in a plant cell is contained in
- a nucleus
  - a chromosome
  - a protein molecule
  - an enzyme molecule
17. Base your answer(s) to the following question(s) on the diagrams below of two cells, X and Y, and on your knowledge of biology.



Select one lettered organelle and write the letter of that organelle in the space below. Identify the organelle you selected.

18. Identify one process that is carried out in cell Y that is not carried out in cell X.

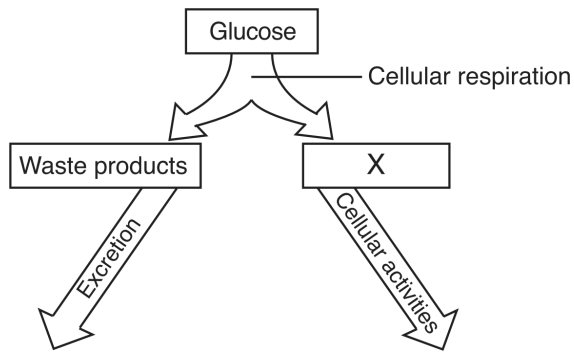
19. Base your answer(s) to the following question(s) on the two different cells shown below. Only cell A produces substance X. Both cells A and B use substance X.



Identify the type of organelle found in both cell A and cell B that uses substance X.

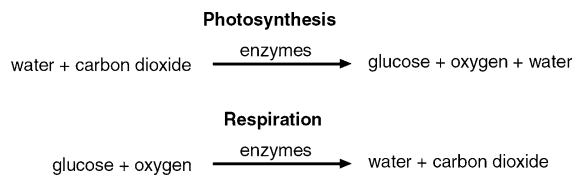
20. Identify the type of organelle in cell A that produces substance X.
21. Identify substance X.
22. During the process of photosynthesis, energy from the Sun is converted into
- chemical energy in the bonds of inorganic molecules
  - chemical energy in the bonds of organic molecules
  - enzymes used to produce inorganic molecules
  - enzymes used to produce organic molecules
23. Which process initially provides the link between an abiotic factor and the energy needs of an entire ecosystem?
- respiration
  - photosynthesis
  - decomposition
  - predation
24. Carbon dioxide makes up less than 1 percent of Earth's atmosphere, and oxygen makes up about 20 percent. These percentages are maintained most directly by
- respiration and photosynthesis
  - the ozone shield
  - synthesis and digestion
  - energy recycling in ecosystems
25. The temporary storage of energy in ATP molecules is part of which process?
- cell division
  - cellular respiration
  - protein synthesis
  - DNA replication

26. The diagram below represents a biochemical process.



Which molecule is represented by X?

- A. DNA                      B. starch  
C. protein                  D. ATP
27. Energy from organic molecules can be stored in ATP molecules as a direct result of the process of
- A. cellular respiration  
B. cellular reproduction  
C. diffusion  
D. digestion
28. Base your answer(s) to the following question(s) on the summary equations of two processes and on your knowledge of biology.

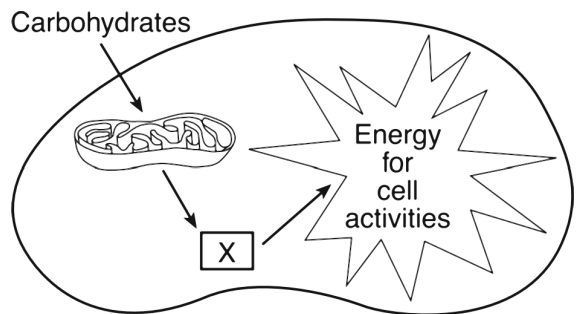


State *one* reason *each* of the two processes is important for living things.

Photosynthesis:

Respiration:

29. The energy used to obtain, transfer, and transport materials within an organism comes directly from
- A. ATP                      B. DNA  
C. sunlight                D. starch
30. The energy released when sugar molecules are broken down is stored in
- A. minerals                B. ATP  
C. DNA                      D. wastes
31. The diagram below represents a series of events that occur in living cells.



Which molecule is indicated by X?

- A. glucose                B. ATP  
C. carbon dioxide      D. protein

Cells: 1 Star      05/27/2014

- |  |  |
|--|--|
| <p>1.<br/>Answer: C</p> <p>2.<br/>Answer: A</p> <p>3.<br/>Answer: A</p> <p>4.<br/>Answer: C</p> <p>5.<br/>Answer: A</p> <p>6.<br/>Answer: C</p> <p>7.<br/>Answer: A</p> <p>8.<br/>Answer: A</p> <p>9.<br/>Answer: B</p> <p>10.<br/>Answer: ribosome</p> <p>11.<br/>Answer: C</p> <p>12.<br/>Answer: B</p> <p>13.<br/>Answer: D</p> <p>14.<br/>Answer: chloroplast or cell wall</p> <p>15.<br/>Answer: Cell 1, because it contains chloroplasts.<br/>OR Cell 1, because it has a cell wall.</p> <p>16.<br/>Answer: A</p> <p>17.<br/>Answer: itaA—cell/plasma membrane or<br/>B—nucleus or C—mitochondrion.</p> <p>18.<br/>Answer: photosynthesis OR production of cellulose<br/>OR produces chlorophyll OR producing<br/>its own food</p> <p>19.<br/>Answer: mitochondrion</p> <p>20.<br/>Answer: chloroplast</p> <p>21.<br/>Answer: oxygen or glucose or sugar</p> <p>22.<br/>Answer: B</p> <p>23.<br/>Answer: B</p> <p>24.<br/>Answer: A</p> <p>25.<br/>Answer: B</p> | <p>26.<br/>Answer: D</p> <p>27.<br/>Answer: A</p> <p>28.<br/>Answer: Photosynthesis: – glucose produced is<br/>basis of all food chains – O<sub>2</sub> released is<br/>needed by aerobic organisms – changes<br/>light energy to chemical energy<br/><br/>Respiration: – supplies energy for<br/>metabolism – supplies CO<sub>2</sub> for<br/>photosynthesis</p> <p>29.<br/>Answer: A</p> <p>30.<br/>Answer: B</p> <p>31.<br/>Answer: B</p> |
|--|--|