1. Which factor contributed most to the development of the cell theory?
   
   A. the discovery of many new species during the last century
   
   B. the development of advanced techniques to determine the chemical composition of substances
   
   C. the increase in knowledge concerning factors influencing the rate of evolution
   
   D. the improvement in microscopes and microscopic techniques during the last two centuries

2. Which statement is not a part of the cell theory?
   
   A. Cells are the basic unit of structure of living things.
   
   B. Cells are the basic unit of function of living things.
   
   C. Cell parts such as chloroplasts are self-replicating.
   
   D. Cells come from preexisting cells.

3. Which organelle is primarily concerned with the conversion of potential energy of organic compounds into suitable form for immediate use by the cell?
   
   A. mitochondria  B. centrosomes  C. ribosomes  D. vacuoles

4. Which organelle is present in the cells of a mouse but not present in the cells of a bean plant?
   
   A. cell wall  B. chloroplast
   
   C. cell membrane  D. centriole

5. Which structure includes all of the others?
   
   A. nucleolus  B. nucleus  C. chromosomes  D. genes
6. Chemical analysis of mitochondria indicates that these organelles
   A. contain ATP molecules  B. do not contain enzymes
   C. are found within cell nuclei  D. transport hemoglobin

7. Which cell organelle is composed of a series of channels throughout the cytoplasm that functions in the transport of molecules?
   A. lysosome  B. chloroplast
   C. cell wall  D. endoplasmic reticulum

8. The ribosomes is an organelle that functions in the process of
   A. phagocytosis  B. pinocytosis
   C. protein synthesis  D. cellular respiration

9. Which structures are found in every living cell?
   A. a plasma membrane and cytoplasm  B. chloroplasts and mitochondria
   C. a cell wall and nucleus  D. centrioles and chromosomes

10. Which cell organelle is involved most directly in the digestion of large particles brought into the cell by phagocytosis?
    A. ribosome  B. mitochondrion  C. lysosome  D. nucleolus

11. Which organelle aids in the maintenance of cell homeostasis by selectively regulating the passage of materials into and out of the cell?
    A. plasma membrane  B. ribosome
    C. lysosome  D. nuclear membrane
12. Which cell structure is represented by the three-dimensional diagram?

A. chloroplast  
B. mitochondrion  
C. plasma membrane  
D. replicated chromosome

13. The fluid-mosaic model of the cell membrane suggests that the membrane is primarily composed of

A. proteins and starches  
B. carbohydrates and lipids  
C. sugars and proteins  
D. proteins and lipids

14. The process of osmosis is best illustrated by the movement of

A. water into root hair cells  
B. oxygen into red blood cells  
C. carbon dioxide through stomates  
D. glucose through phloem

15. Which process requires cellular energy to move molecules across the cell membrane from a region of lower concentration to a region of higher concentration?

A. active transport  
B. diffusion  
C. osmosis  
D. hydrolysis
16. A student prepared three different red blood cell suspensions as follows:

<table>
<thead>
<tr>
<th>Suspension</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>red blood cells + normal blood serum</td>
</tr>
<tr>
<td>B</td>
<td>red blood cells + 10% salt solution</td>
</tr>
<tr>
<td>C</td>
<td>red blood cells + distilled water</td>
</tr>
</tbody>
</table>

Which suspension, when viewed under the microscope, would contain red blood cells that appear wrinkled and reduced in volume?

A. A  B. B  C. C

17. Which suspension, when viewed under the microscope, would contain red blood cells that had swollen and burst apart?

A. A  B. B  C. C

18. [Diagram showing molecules moving across a selectively permeable membrane]

The diagram shows the same type of molecules in area A and area B. With the passage of time, some molecule move from area A to area B.

This movement is the result of the process of

A. phagocytosis  B. pinocytosis  C. diffusion  D. cyclosis

19. A structure that performs a specialized function within a cell is known as

A. a tissue  B. an organelle  C. an organ  D. a system
1. Answer: D
2. Answer: C
3. Answer: A
4. Answer: D
5. Answer: B
6. Answer: A
7. Answer: D
8. Answer: C
9. Answer: A
10. Answer: C
11. Answer: A
12. Answer: C
13. Answer: D
14. Answer: A
15. Answer: A
16. Answer: B
17. Answer: C
18. Answer: C
19. Answer: B