Name _____ Block _____ Date _____

Biology Test 2 – The Cell

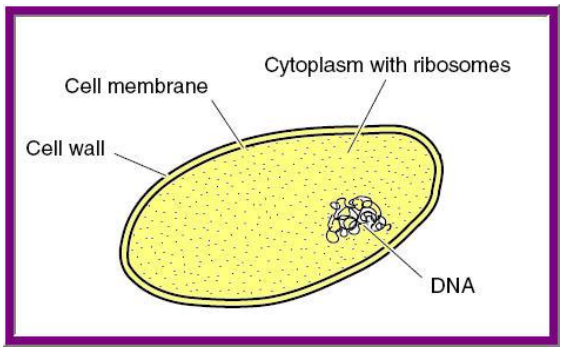
For questions 1 – 15, choose ONLY ONE correct answer and fill in that choice on your Scantron form.

1. **Which pair of structures best shows that plant cells have functions different from animal cells?**
   a. Chloroplasts and cell walls
   b. Cytoplasm and mitochondria
   c. Ribosomes and cell membranes
   d. Nuclei and centrioles

2. **What characteristic do all living things share?**
   a. They reproduce by mitosis.
   b. They are made up of many parts.
   c. They contain DNA.
   d. They need oxygen to survive.

3. **Which of these functions most like the "brain" of a cell?**
   a. The Golgi apparatus
   b. The mitochondrion
   c. The nucleus
   d. The smooth endoplasmic reticulum

4. **How is the prokaryotic bacterium in the diagram different from a eukaryotic cell?**
   a. It stores its genetic information in DNA.
   b. It has ribosomes to make proteins.
   c. It has a cell membrane.
   d. It has no membrane-bound nucleus.



5. **In the human body, the circulatory system transports and delivers substances. Within the cell, which organelle performs a similar function?**
   a. Nucleus
   b. Lysosome
   c. Endoplasmic reticulum
   d. Mitochondrion

6. **A bacterium will construct different proteins to metabolize the sugars lactose or glucose, depending on which one it detects in the outside environment. What part of the bacterium allows it to recognize different substances in the outside environment?**
   a. Nucleus
   b. Lysosomes
   c. Cell membrane
   d. Endoplasmic reticulum

7. **Compared to a skin cell, a muscle cell is likely to have more —**
    a. golgi bodies
    b. chloroplasts
    c. cell membranes
    d. mitochondria

8. **Amino acids link together by peptide bonds to form proteins. In which cellular organelle would this process occur?**
    a. Mitochondrion
    b. Ribosome
    c. Lysosome
    d. Golgi body

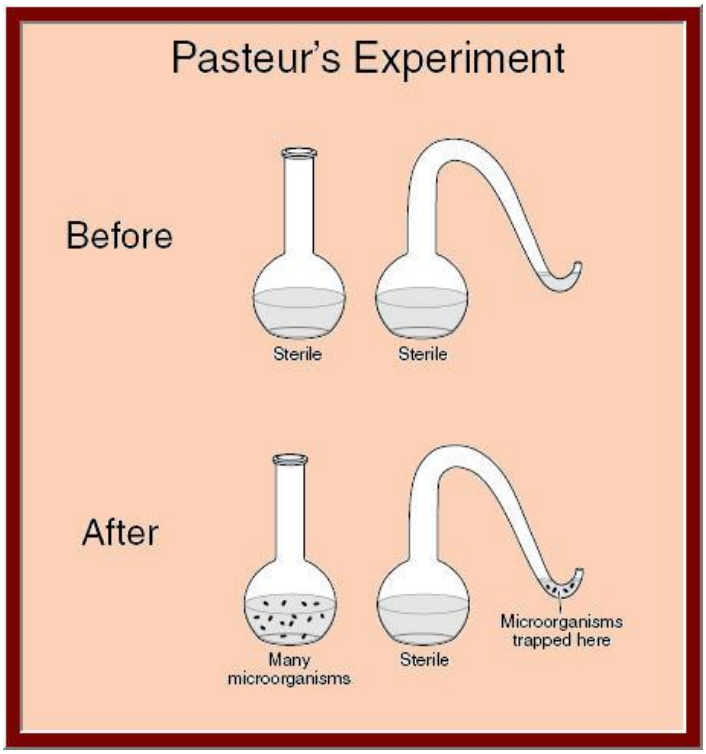
9. **Which of the following came first in the scientific study of living things?**
    a. Light microscope
    b. Electron microscope
    c. Cell theory
    d. Model of DNA

10. **Which of the following correctly matches the scientist with his contribution to cell theory?**
    a. Hooke – invented the microscope
    b. Schleiden – discovered all animals were made of cells
    c. Schwann – discovered all plants were made of cells
    d. Virchow – determined all cells come from preexisting cells

11. **Which of the following correctly describes the difference between the light microscope and the electron microscope.**
    a. Electron microscopes were invented before light microscopes.
    b. Electron microscopes can observe smaller objects, like organelles or viruses.
    c. Light microscopes are only used to observe dead specimens.
    d. Only light microscopes can be used to observe cells.

12. The results of Pasteur's experiment helped Pasteur to —

a. isolate the virus responsible for smallpox
b. convince people to cover food
c. reject the theory of spontaneous generation
d. produce a vaccine against rabies



13. Which of these organisms contains no specialized cells?

a. Mold (a fungus)
b. Kelp (a multicellular protist)
c. Paramecium (a unicellular protist)
d. Sponge (a simple animal)

14. Which of the following organelles is NOT correctly paired with an organ that performs a similar function in a multicellular organism?

a. brain – nucleus
b. cell membrane – skin
c. digestive system – lysosome
d. endoplasmic reticulum – lungs

For questions 16 – 18, choose ALL correct answers and fill in all these choices on your Scantron sheet.

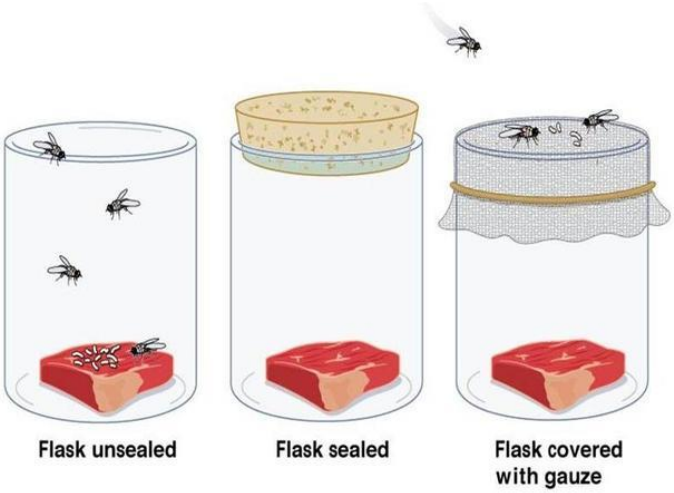
15. Which three of the following statements apply to all cells? Choose ALL correct answers.

a. They are surrounded by a cell wall.
b. They contain DNA.
c. They come from preexisting cells.
d. They contain organelles, such as mitochondria or chloroplasts.
e. They use energy during metabolism.

16. Which three of the following are examples of eukaryotes?

a. eubacteria
b. fungi
c. plant
d. protist
e. virus

For questions 17 – 20, refer to the Francesco Redi's experimental set-up, pictured below:



17. Describe the independent variable.

_____

18. Describe the dependent variable.

_____

19. Identify one constant.

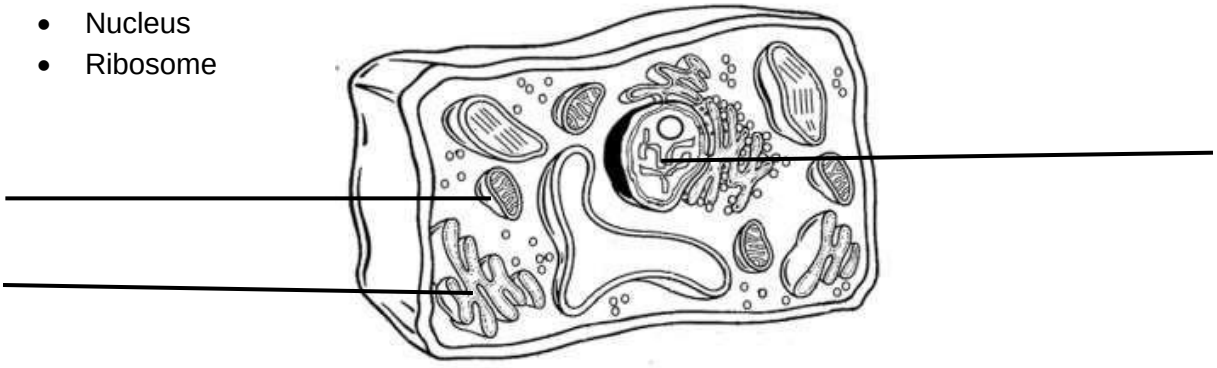
_____

20. Identify the control.

_____

21. Label the cell below on the lines provided using the following terms. Not all terms will be used.

- Cell membrane
- Golgi
- Mitochondria
- Nucleus
- Ribosome



22. Copy each characteristic provided in the list below into the appropriate box. Each bullet will have only one characteristic written in it.

Characteristics

- Always unicellular
- Bacteria
- DNA
- Mitochondria
- Nucleus
- Cell membrane

Prokaryotes Only	Eukaryotes Only	Prokaryotes and Eukaryotes

• •	• •	• •

Name _____ Block _____ Date _____

For the following questions,

- *Please write your answer using complete sentences, lists, or labeled diagrams.*
- *Attempt every question – partial credit will be awarded when appropriate.*
- *Use the back of this sheet or a separate sheet of paper if needed, but clearly label your answers.*

1. Imagine you are an explorer who has just discovered an unknown substance on the ocean floor. Explain how to determine if the substance is alive by describing at least two (2) pieces of useful evidence you could look for.

2. Assuming the substance is living, describe and explain at least two (2) additional pieces of evidence you could look for that would help you classify this organism as prokaryotic or eukaryotic.

3. **You observe that the organism is multicellular with mitochondria and a nucleus, but no chloroplasts, in its cells.** Identify one type of organism it could be (eubacteria, archaebacteria, protist, plant, fungi, or animal) and explain why your observations support this claim.