

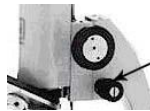
Name \_\_\_\_\_

Class \_\_\_\_\_

**The Microscope**

- Any microscope that has two or more lenses is called a...
  - multi-dimensional microscope
  - multi-functional microscope
  - complex microscope
  - compound microscope
- When you carry your microscope from place to place, you should hold it by the ...
  - tube and the arm
  - base and the stage
  - arm and the base
  - eyepiece and the cord
- To calculate the Field of View, you first need to ...
  - determine the diameter of the field of view for the low power lens
  - calculate the magnification power of the lens you are using
  - count the number of cells in the low power field of view
  - multiply the magnification by the number of cells in the field

4. The part of the microscope that the arrow is pointing to is called the ...



- eyepiece
- diaphragm
- fine adjustment
- course adjustment

5. The part of the microscope that the arrow is pointing to is called the ...



- revolving nosepiece
- low power objective lens
- medium power objective lens
- high power objective lens

6. The part of the microscope that the arrow is pointing to is called the ...



- tube
- base
- stage
- diaphragm

**The Cell**

- There are three factors that can affect your ability to see details of the internal parts of cells. The three factors include all of the following EXCEPT, the ....
  - number of cells
  - type of microscope
  - power of the lenses
  - quality of the prepared slides

8. The 'solar panels' of the plant cell are found in the leaves. The structures that carry out photosynthesis, converting the sun's energy into food for the cell are called the ...
- mitochondria
  - vacuoles
  - chloroplasts
  - stomata

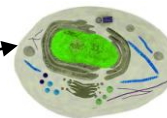
Complete any three of the following by using the microscopes set up in the class ...

(The answers for this question depend on what slides you set up and the power of the field of view)  
 (The circles indicate how the power was set for the last test group)

Microscope #	Objective Lens Power and Field of View	Organism	Estimated Size
● 2 3 4 5 6 7	LOW X 4500    MEDIUM X 1000    HIGH X 450		
1 ● 3 4 5 6 7	LOW X 4500    MEDIUM X 1000    HIGH X 450		
9. 1 2 ● 4 5 6 7	LOW X 4500    MEDIUM X 1000    HIGH X 450		
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1 2 3 4 5 ● 7	LOW X 4500    MEDIUM X 1000    HIGH X 450		
1 2 3 4 5 6 ●	LOW X 4500    MEDIUM X 1000    HIGH X 450		

12. When preparing slides to be used under the objective lens of the microscope you cover the specimen you are going to view with a ...
- glass slide
  - drop of indicator
  - toothpick
  - cover slip

13. The illustration shown here is an animal cell. The function of the **cell membrane** is to ...



- direct all activities in the cell - The 'Command Center'
  - convert energy into useable forms - 'The Powerhouse'
  - control the flow of nutrients - 'The Gateway'
  - store nutrients the cell needs - 'The Storage Room'
14. These structures are not present in the animal cell, they can only be found in the plant cell ...
- cell membrane and chloroplasts
  - vacuoles and nucleus
  - cell wall and chloroplasts
  - mitochondria and cytoplasm

**Organisms Can be Single-Celled or Multi-Cellular**

15. Many single-celled (unicellular) organisms have different ways of moving, obtaining food and carrying out other essential functions for living. Structures, that unicellular organisms, such as a euglena, or a chlamydomonas have for movement are called ...
- A. flagella
  - B. cytoplasm
  - C. stentor
  - D. diatoms
16. In a sample of pond water the amoeba moves by changing its shape. It pushes its cytoplasm against one part of its cell membrane, causing a bulge. This bulge is called a ...
- A. pseudomym
  - B. pseudoplasm
  - C. pseudopods
  - D. pseudophobia
17. Paramecia move swiftly in the water and also direct food into their oral groove, for the paramecia to consume, using these hair-like structures, which are on the outside of their bodies ...
- A. silicons
  - B. cilia
  - C. nuclei
  - D. vacuoles
18. The largest unicellular organism that can be seen with the unaided eye (without a microscope) is the **Acetabularia**. It is a member of this family ...
- A. algae
  - B. fungi
  - C. vertebrae
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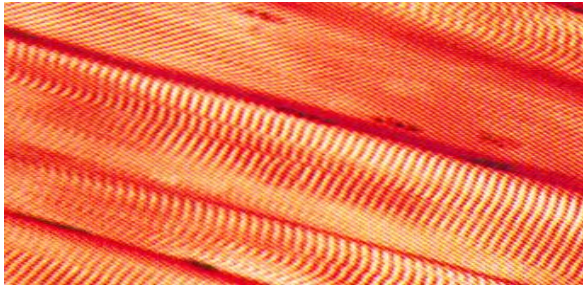
**How Substances Move Into and Out of Cells**

19. Certain materials are allowed to pass through this and others are prevented from passing through. The type of cell membrane that is present in a plant and animal cell is called a ...
- A. **selectively impermeable membrane**
  - B. **selectively permeable membrane**
  - C. permeable membrane
  - D. impermeable membrane
20. Osmosis is the diffusion of water through a selectively permeable membrane. This process occurs because water will move from an area of ...
- A. **low concentration to high concentration**
  - B. **high concentration to low concentration**
  - C. low concentration to low concentration
  - D. **high concentration to high concentration**
21. A process which enables substances to spread out, throughout a solution, eventually becoming evenly distributed in the solution, is called ...
- A. distillation
  - B. dissolving
  - C. desalination
  - D. diffusion

22. Whenever nutrients are moved in and out of cells, the process takes place through the cell membrane. This process occurs because of different ...
- A. types of nutrients present
  - B. concentrations present
  - C. types of membranes
  - D. sizes of openings in the membrane

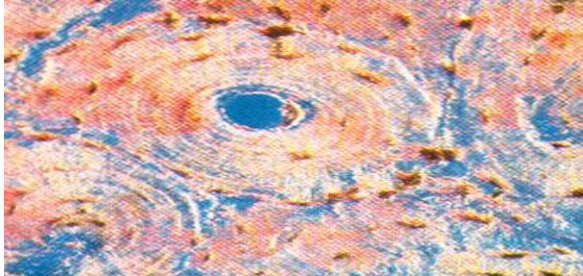
**Multi-Cellular Organisms Combine Cells to Form Tissues and Organs**

23. Different cells have different functions and their structure is different. Identify the cell illustrated.



- A. bone
- B. blood
- C. nerve
- D. muscle

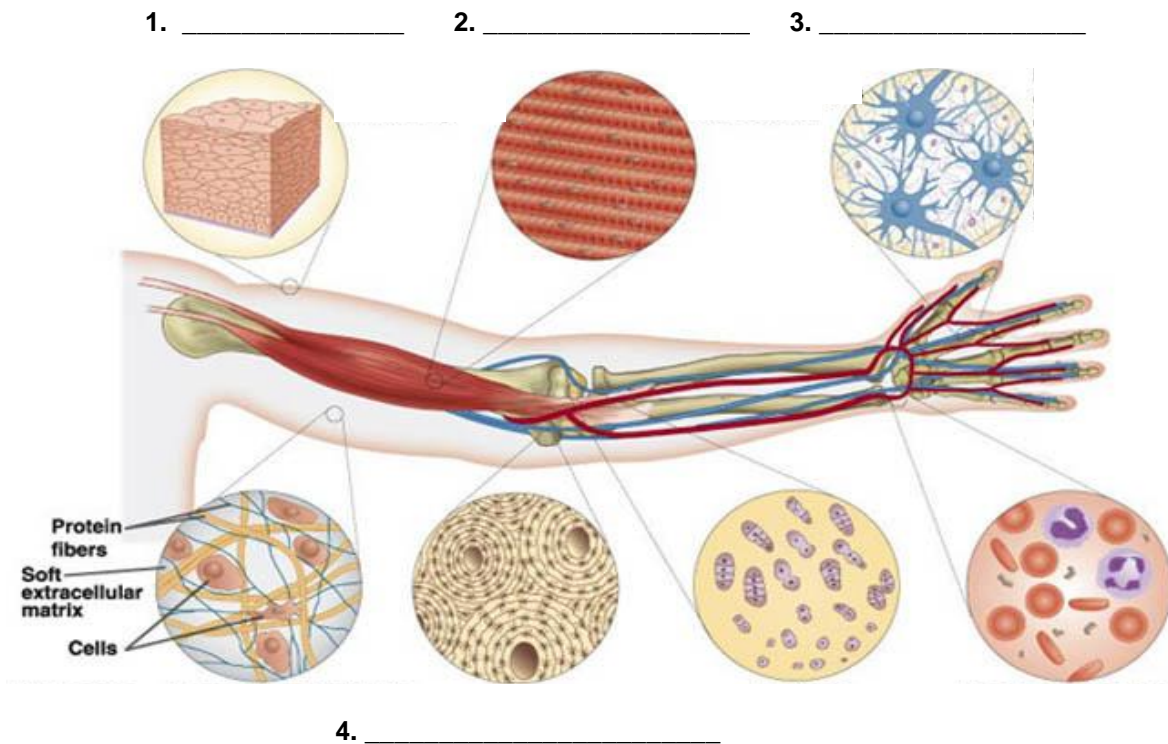
24. Different cells have different functions and their structure is different. Identify the cell illustrated.



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25. The organization of cells follows this pattern -
- A. cells form organs, tissues, and systems
  - B. cells form tissues, organs, and systems
  - C. cells form systems, organs, and tissues
  - D. cells form organs, systems, and tissues
26. The connective tissue in the bones that makes red blood cells is called ...
- A. dendrites
  - B. axons
  - C. marrow
  - D. cartilage
27. Organs work together to make a system or network that performs a specialized function. Plants have only two main systems. They are the ...
- A. stems and the leaves
  - B. roots and the leaves
  - C. shoot and the roots
  - D. leaves and the shoot

28. Specialized cells are specialized for particular tasks. These types of cells are specialized to send and receive stimulus-response messages throughout a multi-cellular organism. They are called ...
- nerve cells
  - muscle cells
  - blood cells
  - bone cells
29. The transportation of nutrients in plants is the role of the plant's tissue. Specialized tissue connects the roots to the leaves. The Phloem tissue transports ...
- water from the leaves to the air in a process called transpiration
  - water from the roots to the leaves
  - sugars, manufactured in the leaves to the rest of the plant
  - energy to the vacuole to utilize the food stored there
30. Identify the human tissue (**Connective, Muscle, Nervous, and Epithelial**) in the illustration below.

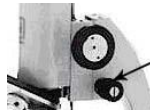


## ANSWER KEY

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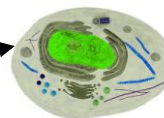
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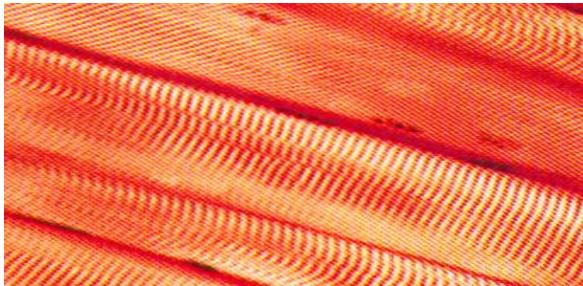
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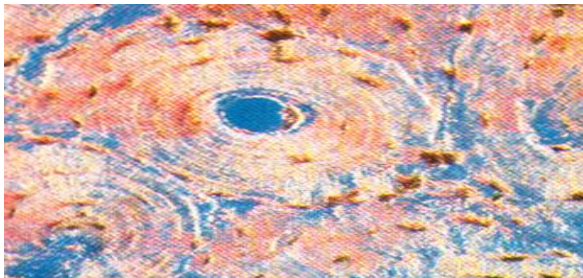
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