

1. Briefly list the contributions of the following scientists in the debate of biogenesis vs abiogenesis. Indicate if they were proponents for biogenesis or abiogenesis.

Aristotle _____

Redi _____

Leeuwenhoek _____

Huxley _____

Needham _____

Spallanzani _____

Pasteur _____

Urey and Miller _____

13. What are four points of the cell theory?

1. _____
2. _____
3. _____
4. _____

14. Briefly list the contributions of the following scientists in the development of the cell theory.

Hooke _____

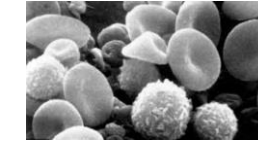
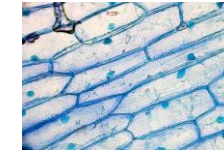
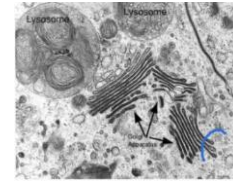
Leeuwenhoek _____

Schleiden _____

Schwann _____

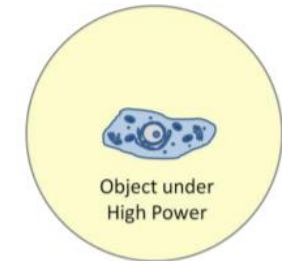
Virchow _____

115. Name the type of microscope that has taken the following images

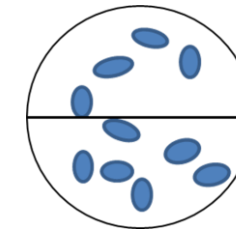


16. A microscope has an ocular objective of 10x and a high power objective of 50x, what is the microscope's total magnification? _____

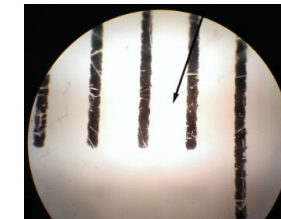
17. Estimate the size of the cell in the diagram if the microscope has a high power and the field of view is 500 μm.



18. The diagram below shows Bacillus-shaped bacteria in a hypothetical field of view. The field of view is 120 μm, and it is estimated that you could line up 8 bacteria across the field diameter. What is the size of one bacterium?



19. Under low power (40x) this is the image of a ruler observed. Calculate the field of view for the microscope

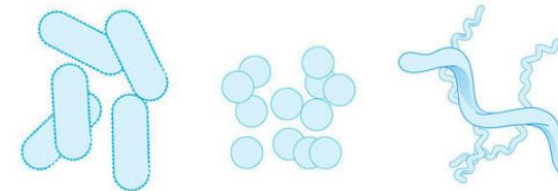


- a) At low power (40x)
- b) At medium power (100x)
- c) At high power (400x)

20. Why is surface area: volume (SA/V) ratio important to the size of the cell?

21. Compare and contrast prokaryotic and eukaryotic cells.

22. Label the 3 shapes of bacterial cells

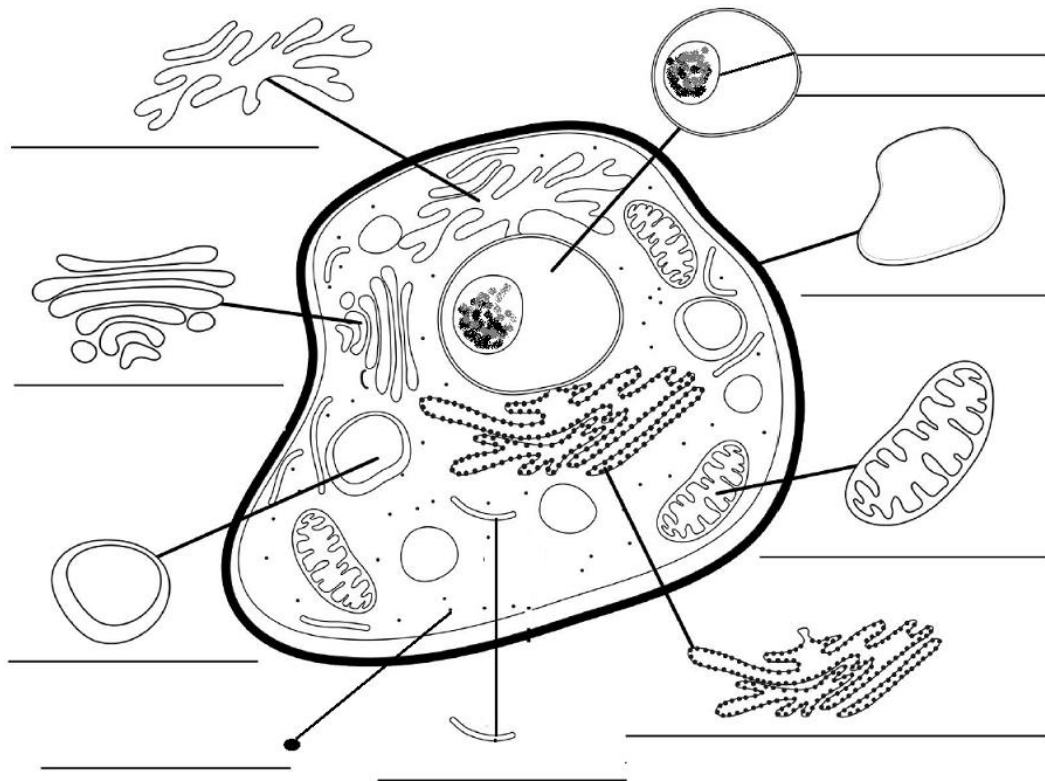


24. What is ATP?

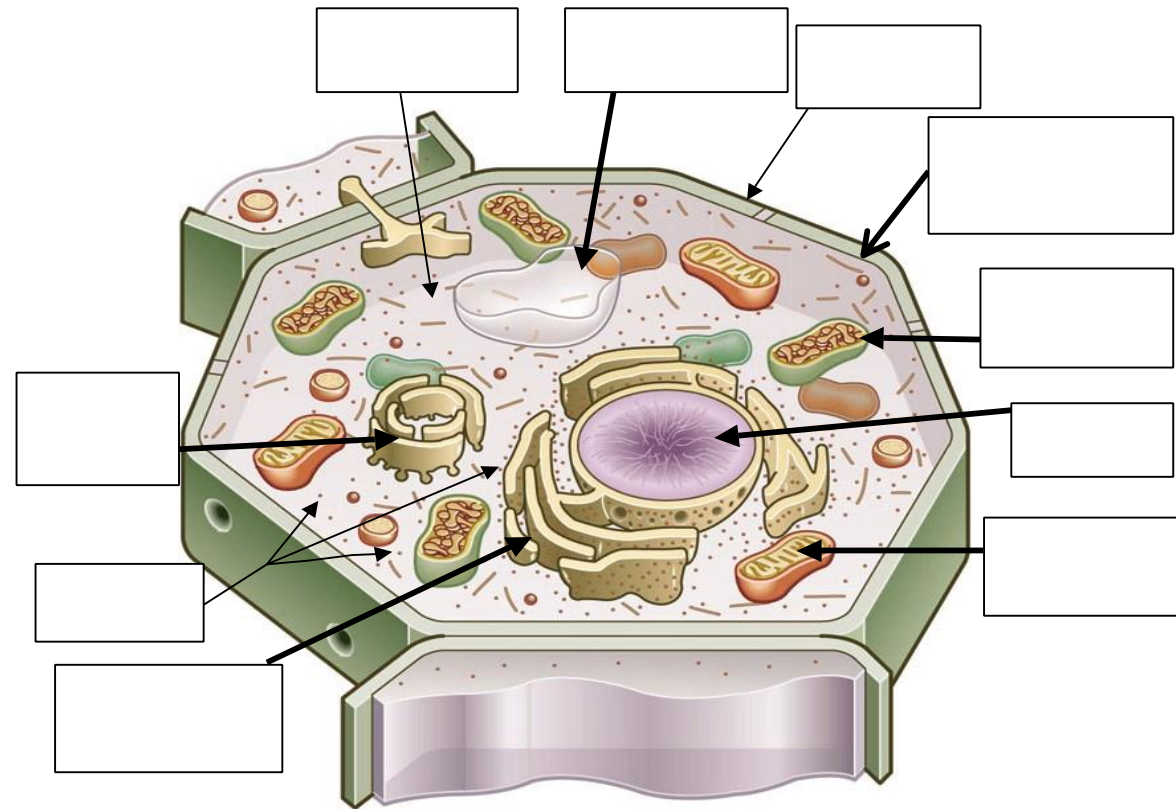
25. Complete the following table by writing the name of the cell organelle in the right hand column that matches the structure/function in the left hand column.

Structure/Function	Cell Part
Storage area within the cell, it is very large in plants.	
The sites of protein synthesis	
Organelle that manages or controls all the cell functions in a eukaryotic cell	
Contains chlorophyll, a green pigment that traps energy from sunlight and gives plants their green color	
Digests excess or worn-out cell parts, food particles and invading viruses or bacteria	
Small container made of membrane used for storage and transport in the cell	
Strong rigid structure that surrounds the cell membrane and gives shape to plant cells	
The site of cellular respiration, it produces a usable form of energy (ATP) for the cell	
Processes and packages proteins for transport out of the cell	
Assembles some components of the cell membrane; synthesizes lipids	
Site where ribosomes are made	
Provides support for the cell and controls what goes in and out of the cell	
A cell's contents, including cytosol and organelles	
Jelly-like fluid inside the cell membrane	
Assembles some components of the cell membrane; modifies proteins; has ribosomes attached to it	
Network of fibres that extend throughout the cytosol	

29. Label the cells below



a) What type of cell is this?
 b) How do you know?



Questions:

1. Which type of cell is this?

2. How do you know which type of cell it is?