Name _____ Block _ Date _____

Test 2 Study Guide: The Cell (BIO.3a-c) – Due the day of the test (Project Grade)

Answer each question using information from your notes, quizzes, and the attached summary.

*Describe 6 features of all living things, according to **cell theory**:*

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-
-
-
-
-

What technology was needed *before* the **cell theory** could be established?_____

Complete the chart below to describe the development of microscopes:

Type of Technology	Description – How does it work?	Function – Why is it useful?
Magnifying lens / simple light microscope		
Compound light microscope		
Electron microscope		

*Complete the chart below to describe the contributions of a few scientists to the development of **cell theory**.*

Scientist	Time period (birth-death)	Role or contribution
van Leeuwenhoek		
Hooke		
Schwann		
Schlieden		
Virchow		

Identify the two basic types of cells. _____

Complete the chart below to compare and contrast ***prokaryotic cells with eukaryotic cells***

Prokaryotes Only…	Eukaryotes Only…
• • • • •	• • • • •
All Cells…	
• • • • •	

Draw and label an example of a ***prokaryote and a eukaryote*** *below:*

Prokaryote	Eukaryote

Complete this sentence: If a scientist wants to determine whether an organism is a **prokaryote or a eukaryote**, she will look for _____

*Complete the chart below to describe cells from the **six kingdoms of life***

Kingdom	Prokaryote or eukaryote?	Nucleus (Y or N)?	Membrane-bound organelles (Y or N)?	Unicellular or multicellular?	Other key features?	Examples
Eubacteria						
Archae-bacteria						
Protist						
Plant						
Fungi						
Animal						

*Complete the chart below to describe essential **cell structures and their functions***

Organelle	Function	Prokaryotes, eukaryotes, or both?	Plant cells, animal cells, or both?
Nucleus			
Chloroplast			
Endoplasmic Reticulum			
Golgi			
Lysosome			
Cell Membrane			
Ribosome			
Mitochondrion			
Cell Wall			
Vacuole			
Cytoplasm			
Cytoskeleton			

*Draw and label an example of a **plant cell and an animal cell** below:*

Plant cell	Animal cell

Complete this sentence: If a scientist wants to determine whether an organism is **a plant or an animal**, she will look for _____

Complete the chart below to compare **unicellular organisms to multicellular organisms**

Type of organism	How many cells in one individual (one or many)?	Specialized cells (Y or N)?	How do they perform all life functions?	Examples
Unicellular				
Multicellular				

Explain the concept of **cell specialization**, and describe at least 2 examples from the human body.

- Cell specialization - _____
- Human Example 1 - _____
- Human Example 2 - _____

Explain the **theory of spontaneous generation** and how scientific experiments disproved this theory.

_____

_____