

Name: _____ Date: _____ Period: _____ BIN: _____

Cell Biology: An Independent Learning Exercise – Study Guide

When providing the best possible answer to the following questions please apply all learned scientific techniques and procedures, do not use abbreviations, use proper scientific terminology, show work for all mathematical calculations, use all significant figure and scientific notation rules, apply S.E.E.C. writing strategies, and note that at all times spelling counts. Your ability to meet these and all established classroom expectations, including labeling of BINs, providing heading information, and your ability to follow directions may be included in computation of grade.

1. What are the three statements of the cell theory?

a. .

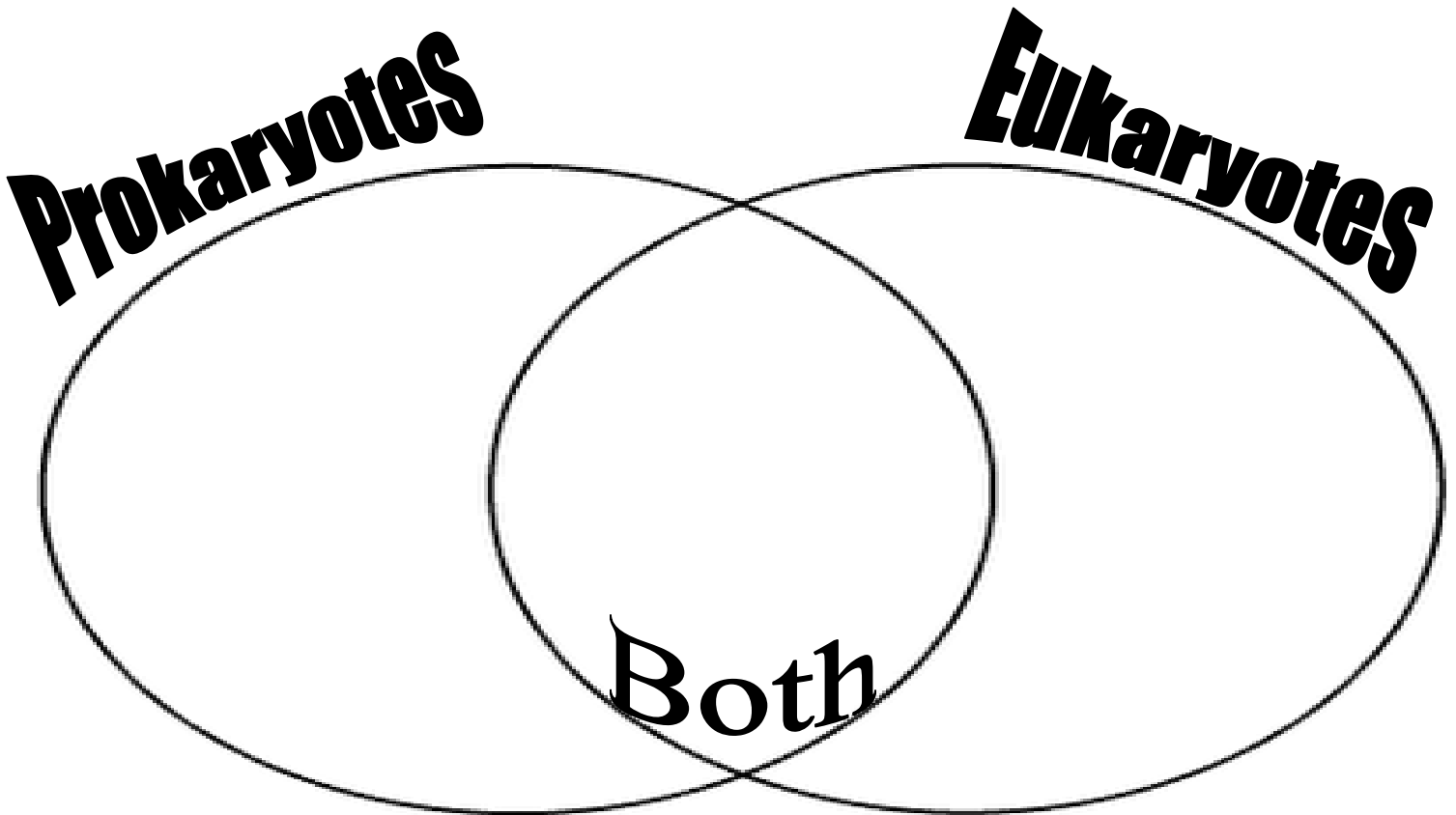
b. .

c. .

2. Fill in the table below with the five scientists that contributed to the development of the cell theory.

Name of scientist:	Area of study:	Known for: (what publications or contributions did the scientist make for which he is remembered?)	How did this scientist contribute to the development of the Cell Theory?

3. Use the diagram below to organize the similarities and differences between prokaryotic cells and eukaryotic cells.



4. Prokaryotic organisms can be found in the following taxa:

a. Domain _____ Kingdom _____

b. Domain _____ Kingdom _____

5. Examples of prokaryotic organisms are: _____

6. Eukaryotic organisms can be found in the following taxa:

a. Domain _____

i. Kingdom _____

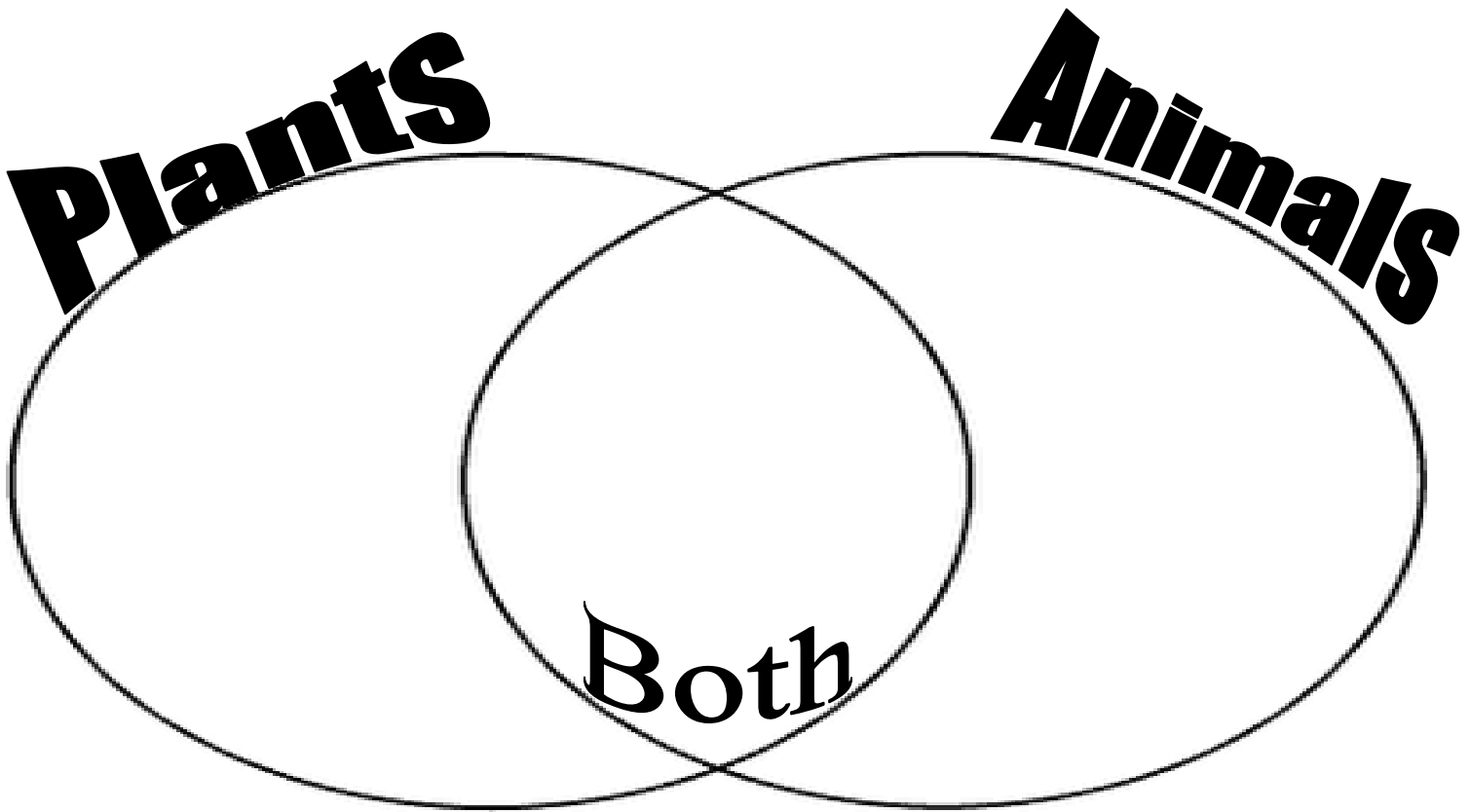
iii. Kingdom _____

ii. Kingdom _____

iv. Kingdom _____

7. Examples of eukaryotic organisms include: _____

8. Use the diagram below to organize the similarities and differences between plant cells and animal cells.



9. Why is cell size limited?

- a. What happens to the surface area of a cell as its size increases?
- b. What happens to the volume of a cell as its size increases?
- c. What happens to the surface area to volume ratio as cell size increases?

10. Imagine you are looking at a very large cell. Next to it is a very small cell. Which one has a larger surface area to volume ratio. Explain your answer.

11. Complete the table below regarding structures and functions of structures and organelles.

Structure or Organelle	Diagram	Description of Structure	Function	Type of cell/organism			
				Prokaryote	Eukaryote	Plant	Animal
Cell Wall							
Cell Membrane							
Cytoplasm							
Nucleus							
Nucleolus							
Chromatin							
Smooth Endoplasmic Reticulum							

Structure or Organelle	Diagram	Description of Structure	Function	Type of cell/organism			
				Prokaryote	Eukaryote	Plant	Animal
Rough Endoplasmic Reticulum							
Transport Vesicles							
Golgi Apparatus							
Lysosomes							
Peroxisomes							
Plasmodesmata							
Mitochondria							

Structure or Organelle	Diagram	Description of Structure	Function	Type of cell/organism			
				Prokaryote	Eukaryote	Plant	Animal
Chloroplast							
Vacuoles							
Centrosomes							
Centrioles							
Cytoskeleton							
Microtubules							

Structure or Organelle	Diagram	Description of Structure	Function	Type of cell/organism			
				Prokaryote	Eukaryote	Plant	Animal
Microfilaments							
Intermediate Filaments							
Cilia							
Flagella							
Pseudopodia							