

Name _____ Date _____ Per _____

LIFE IS CELLULAR – Section 7.1 Reading Guide (pages 190-194)

The Discovery of the Cell

1) What did Robert Hooke look at underneath an early compound microscope? _____

2) Why did Hooke name the thousand of empty chambers in the plant “cells”? _____

3) What are the 3 concepts of the cell theory?

- _____
- _____
- _____

4) What are the two types of lenses found on a compound microscope? What is the function of each lens?

- _____
- _____

5) What is the maximum magnification a compound light microscope can provide? _____

6) What are two problems with light microscopy?

- _____
- _____

7) Most compound light microscopes have four objective lenses with magnifications of 4x, 10x, 40x, and 100x. What magnifications are available **if the eyepiece magnifies 15 times**?

- | | |
|--|----------------------|
| i) 4x lens (multiply 4x by 15x): _____ | iii) 40x lens: _____ |
| ii) 10 x lens (see above): _____ | iv) 100x lens: _____ |

8) Describe how fluorescence/fluorescent dyes is/are used in microscopy. _____

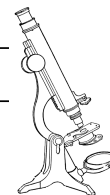
9) What do electron microscopes use to see small cells instead of light? _____

10) Compare transmission electron microscopes and scanning electron microscopes.

• **TEM:** _____

• **SEM:** _____

11) At the hospital, a sample of Michelle’s blood was drawn and examined. The red blood cells appeared swollen. What kind of microscope was most likely used to study the blood sample?



Prokaryotes and Eukaryotes

12) What is the diameter of the smallest *Mycoplasma* bacteria? _____

13) What are the 2 categories that all cells fall into?

_____ ; _____

What determines which category cells will be classified in? _____

14) In the “Build Vocabulary” section in the margins of page 194:

a) What does **karyon** mean? _____

b) What does **pro** mean? _____

15) List 2 ways in which prokaryotic and eukaryotic cells are **similar**.

1) _____

2) _____

16) List 2 ways in which prokaryotic and eukaryotic cells are **different**.

1) _____

2) _____

17) Using the proper terms, label the structures indicated in the diagrams (**NOTE:** Use page 206)

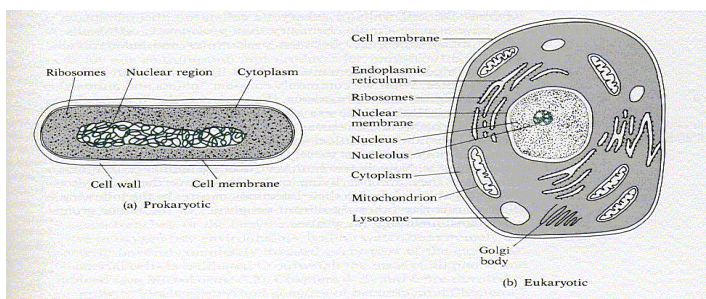


Figure A

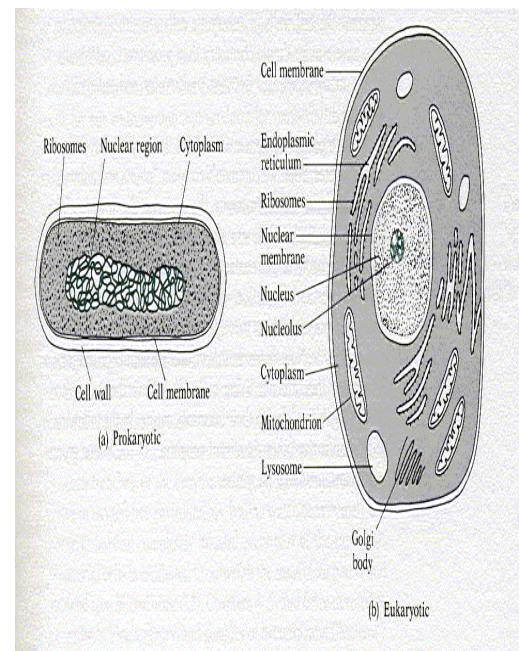


Figure B

18) a) Which diagram represents a **prokaryotic** cell? _____

b) Which diagram represents a **eukaryotic** cell? _____