Study Guide **Name**_____
Cytology **Block** _____

Please use this study guide as you prepare for the test, it will be very helpful to you. As always, save the study guides to prepare for the final exam. If you need help, I am available after school every day, unless I have a meeting. Please see me during class if you need additional help and would like to schedule time to get help.

Italicized questions do not require a written answer.

1. Cytology is the study of _____.

2. Antibiotics work to destroy bacteria. Antibiotics can block production of the

_____ by shutting down ribosomes OR can interfere with the

production of the outermost part of a bacterial cell called the _____.

3. ***Know and understand the function of all cell parts listed in the Cytology packet. Be able to label parts of a cell and parts of the nucleus if given a picture of a cell.***

4a. List main **differences** between prokaryotes and eukaryotes.

4b. List all features and characteristics **common** to all cell types (both prokaryotes and eukaryotes)

4 c. Is a virus considered a cell?

5. a)What is the difference between rough endoplasmic reticulum and smooth endoplasmic reticulum?

5b) Common to both, RER and SER, is that they are systems of _____ that carry the

contents _____ (hint: what does "endo" mean).

6. What are the 3 forms of prokaryotic cells?

name: *spirillium* _____ _____
shape: *spiral*

Know what each form means (for example, know that bacillus means rod shaped)

When given a picture of each form, and a name that might match it, make sure you know that you should choose the rod-shaped form to represent the bacterium "Lactobacillus acidophilus", for example.

7. a. Of the 5 major Kingdoms of life (plant, animal, protist, fungi, and bacteria) which is the only major life form that is prokaryotic?

You should know the very basics of the kingdoms of life, for example,
A tree, a dandelion and grass are from the _____Kingdom
A human and a frog are both members of the _____ Kingdom
A euglena, paramecium and an ameba are from the _____ Kingdom
A mushroom and mold are from the _____ Kingdom
A *Staphylococcus aureus* bacterium is from the _____ Kingdom

7b. Name one difference between a bacterial cell and a cell found in a frog.

7c. Name a similarity between an *E. coli* bacterial cell and a cell you might find in a tulip.

FYI, you will be asked to compare two different cell types, such as: a bacterial cell with a type of animal cell (or a type of plant cell, as above in 7c). This is essentially comparing a prokaryote with a eukaryote. This is an example of APPLYING the information.

8. Fill in the prefix or suffix with its meaning from the word bank. Not all of the words will be used.

Word bank: after, before, hating (fearing), inside, loving, nucleus, outside, true

a. "endo" - _____ d. "phobic" _____

b. "karyote" _____ e. "eu" _____

c. "pro" _____ f. "philic" _____
This will also help you figure out the meaning of some words

9. Chloroplasts and mitochondria are folded many times internally- why?

10. List the main functions of the cell wall. What is the only kingdom classification that does NOT have organisms with cells containing a cell wall? What's the cell wall made from?

11. The cell wall provides support and shape in a plant cell. What provides structural support in an animal cell?

12. The name of the plastids that convert light energy from the sun into food for a plant and some protists such as euglena are called _____.

13. The organelle responsible for converting food energy into the type of energy that a cell can use (called ATP) is the _____.

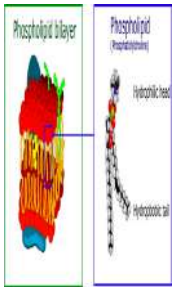
14. The organelles responsible for making (or assembling) proteins are _____.

15. The membrane bound organelles responsible for storing digestive enzymes and digesting old cell parts are _____.

16. What is the name of the bacterial cell part that allows bacteria to transfer genetic information such as resistance to antibiotics?_____

17. A cell that requires a great deal of energy, like a muscle cell might have hundreds of _____.

18. The part below is from a plasma membrane.
What is the name of this part?
What is the hydrophobic part(s) and what is
the hydrophilic part(s)?



(Know the meaning of hydrophobic and hydrophilic.)

19. How do ribosomes, the rough ER and Golgi work together? What gets transported?

20. a) A eukaryotic cell's DNA is found in the _____.

b) A prokaryote does not have a _____ to store DNA.

21. When you think of cell regulation, think of this part that regulates what enters and leaves a cell:

22. What is the generic term for cell structures that allow eukaryotic cells to function efficiently?

23. Plants store water, waste products and nutrients in a specialized part that could take up half of the cell. This part is the:

24. What are cilia and flagella used for? How can you tell the difference between them?