



MI-EL CHRISTIAN SCHOOL
7th Grade Study Guide
Mrs. Then

NAME: _____

DATE: _____

A. Read each question below, and choose the best answer. (10pts/2pts each)

1. In eukaryotic cells, the vacuole contains:
 - a. Proteins
 - b. DNA
 - c. Chromosomes
 - d. Water

2. The surface area-to-volume ratio of a cell limits the size of:
 - a. Chromosomes
 - b. Organelles
 - c. Cells
 - d. None of the above.

3. Two types of organisms whose cells do not have a nucleus are:
 - a. Eukaryotes and Archaeabacteria.
 - b. Prokaryotes and eukaryotes
 - c. Prokaryotes and Arachaebacteria
 - d. All of the above

4. Prokaryotic cells make more cells by:
 - a. Mitosis
 - b. Cell Divison
 - c. Binary Fission
 - d. Anaphase

5. Eukaryotic cells make more cells by:
 - a. Reproduction
 - b. Mitosis
 - c. Binary Fission
 - d. Telophase

B. Write T (True) or F (False) on the line before each statement. Justify if the answer is false. (10pts/ 1pt each)

1. _____ Prophase is the phase before mitosis begins.
2. _____ Mitosis begins in Prophase.
3. _____ Chromosomes are distributed equally to daughter cells at interphase.
4. _____ Chromosomes are duplicated at anaphase.
5. _____ Chromosomes form long strands at interphase.

C. Define each of the following vocabulary terms. (10pts/2pts each)

1. Mitochondria -
2. Organelles -
3. Vacuole -
4. Endoplasmic R. -
5. Ribosomes -

D. Match each definition with the correct term. Write the letter on the line next to the definition. (10pts/2pts each)

- | | |
|--|-----------------|
| 1. _____ The most basic unit of all living things. | A. Cell Wall |
| 2. _____ Groups of organs work together to do a certain job. | B. Organ System |
| 3. _____ Ribosomes and mitochondria | C. Eukaryote |
| 4. _____ Organism whose cells have a nucleus. | D. Cell |
| 5. _____ Only plant cells have this organelle. | E. Organelles |

E. Describe each of the phases of mitosis. Specify what happens in each of the phases. (10pts/2pts)

1. Interphase -
2. Prophase -
3. Telophase -
4. Metaphase -
5. Anaphase -

F. Answer in complete sentences the following questions. (10pts/2pts each)

1. What is meant by "DNA is the blueprint"?
2. Why didn't scientists before Robert Hooke develop the cell theory?
3. How many cells are produced from a single cell during mitosis?
4. When a cell undergoes mitosis, the daughter cell will have how many chromosomes?
5. Why is the nucleus important in cell activities and reproduction?

G. Answer in complete sentences the following questions. (10pts/2pts each)

1. What is the main difference between cytokinesis in plants and animals?
2. Why are cells so important?
3. How can cells be seen?
4. What is the difference between a single celled organism and a multicellular?
5. What is the difference between a prokaryotic cell and a eukaryotic?

H. Directions: From the words in each problem fill in the punnett squares. (20pts/2pts each)

Tall is dominant and "T" is the letter used to represent this allele.

Short is recessive and "t" is the letter used to represent this allele.

1. If the genotype is homozygous tall what are the letters for this? _____
2. If the genotype is heterozygous tall what are the letters for this? _____
3. Cross homozygous tall with homozygous short. _____ x _____
4. Cross heterozygous tall with homozygous short. _____ x _____
5. Put the alleles in the appropriate place and fill in the punnett squares correctly. **(Tt x Tt)**

6. Put the alleles in the appropriate place and fill in the punnett squares correctly. **(Mm x mm)**

- I. Draw the process of mitosis and illustrate each of its phases. Label each of the following terms: Anaphase, Centrioles, Interphase, Microtubules, Metaphase, Prophase, Centromeres, Telophase & Chromosomes. (10pts/2pts)**