
Cytology (Chapter 7)

Objective 1: Cell Theory

1. List the scientists who contributed to the development of the cell theory and explain their contribution.
2. List the three parts of the cell theory.
3. Starting with the cell and ending with an organism, give the different levels of organization.

Objective 2: Microscope

1. Define the following parts of a microscope, and be able to identify them on a picture: objective lens, eyepiece, coarse adjustment knob, and fine adjustment knob.
2. How is total magnification calculated?
3. If the ocular lens of a microscope has a magnification of 10x and the objective lens is set on 45x, what is the total magnification? Show your work.

Objective 3: Cell Specialization

1. What is the function of the following: RBCs, WBCs, T cells, B cells, Neurons, Muscle Cells
2. Draw a neuron and label the nucleus.
3. What is a hormone?
4. Describe the function of the following hormones:
 - a. Estrogen
 - b. Testosterone
 - c. Adrenaline

Objective 4: Cells

1. Differentiate between a prokaryotic and an eukaryotic cell.
2. List the differences between a plant and animal cell.
3. Give the function for each of the following organelles, indicate the type of cell (plant or animal) that the organelles would be present in, and be able to identify them on a picture:
 - a. Cell (plasma) membrane
 - b. Cell wall
 - c. Cytoplasm
 - d. Nucleus
 - e. Nucleolus
 - f. Ribosomes
 - g. Mitochondria
 - h. Chloroplast
 - i. Vacuole
4. Draw the cell membrane. Label the phospholipids and the proteins.
5. In the mitochondria, what is the advantage of having a folded inner membrane?

Rewind Your Mind (Material previous to this Unit)

1. What are the four types of organic molecules? Identify their monomers, functions, give an example of each, and be able to identify pictures.
2. Be able to identify acids and bases. What types of ions are mainly found in each?
3. What are the three major characteristics of enzymes?
4. What are the 8 life processes of life?

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