

THE CELL

CHAPTER- 3 p. 66-80

1. What are the 3 parts to the cell theory?

- a. All organisms are composed of 1 or more cells
- b. Cells are the basic unit of life
- c. All cells come from pre-existing cells

2. Describe the 2 basic types of cells:

a. Prokaryotic:

- lack a true nucleus
- lack membrane-bound organelles

b. Eukaryotic:

- have a nucleus
- have membrane-bound organelles

3. Cells have an outer boundary called a cell membrane, a dense darkly-staining control center called the nucleus and various light-staining particles in the jelly-like fluid known as the cytoplasm.

Animal Cells and Plant Cells

1. Why is it difficult to describe a typical animal cell?

- cells vary depending on their structure and function i.e. muscle cell vs. blood cell

2. What structures do plant cells contain that animal cells do not?

- cell wall
- chloroplast
- large vacuole

3. For each organelle below: make a drawing of it, describe its structure (i.e. location in the cell, shape, etc), and explain the function of each organelle (p. 69):

DRAWING	STRUCTURE	FUNCTION
NUCLEUS	-spherical structure bound by a double membrane containing chromatin in semifluid (nucleoplasm)	-storage of genetic information, synthesis of DNA + RNA
MITOCHONDRIA	-double membrane bound organelle with inner fluid space (matrix) and folds (cristae)	Cellular Respiration
CHLOROPLASTS	membranous grana bounded by a double membrane	Photosynthesis
RIBOSOMES	small complex assemblies of protein and RNA, often bound to ER	Protein Synthesis
ENDOPLASMIC RETICULUM	-system of membranous channels and saccules physically continuous with nuclear membrane	Synthesis and/or modification of proteins and other substances and distribution by vesicle formation
GOLGI APPARATUS	-stack of 3-20 curved saccules -directed towards ER and cell membrane	Processing, packaging and distribution of proteins + lipids
LYSOSOMES	-membrane-bound vesicles containing hydrolytic enzymes	Intracellular digestion
VACUOLES	-large membranous sac -larger in plant cells.	Storage of substances
MICROTUBULES	hollow cylinders (tubules)	shape of cells and movement of its parts