

KEY

Name _____ Date _____ Period _____

Bio-Chem

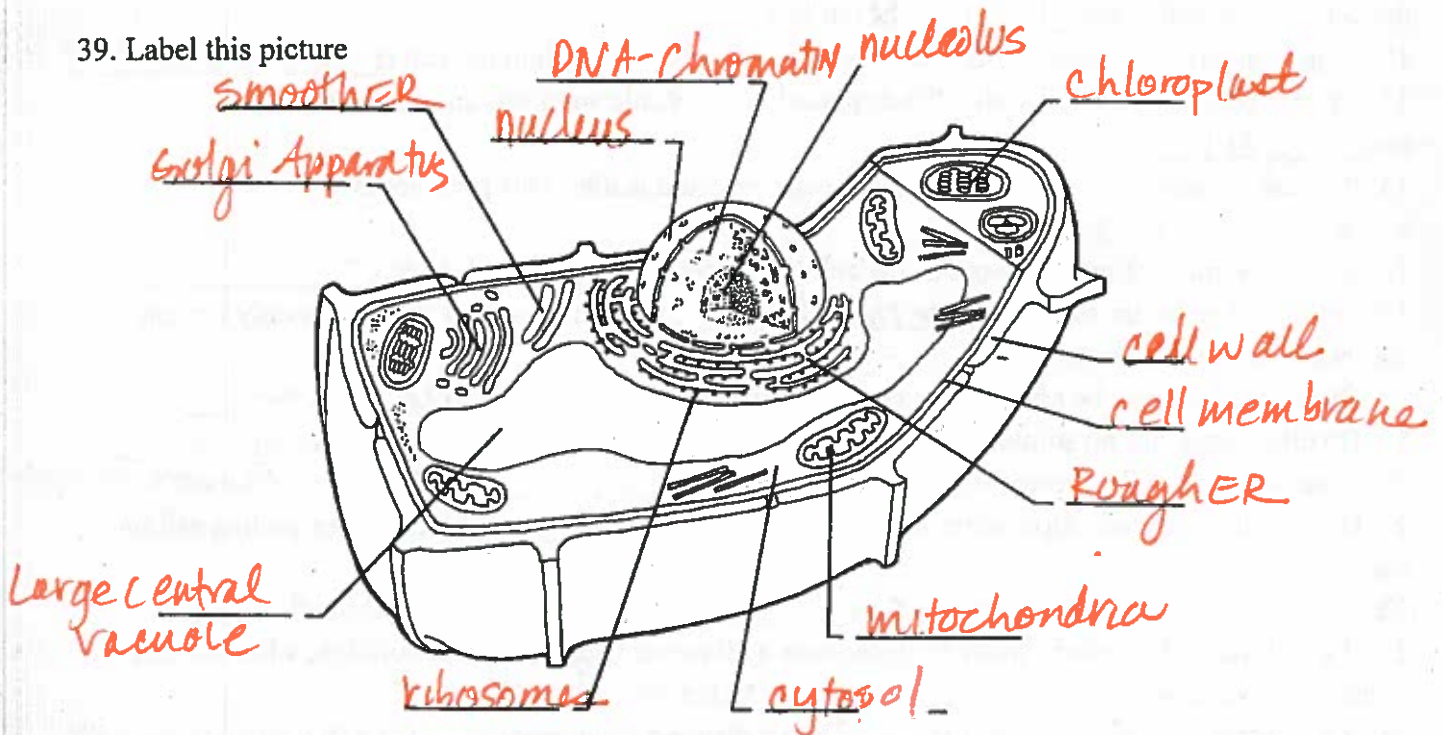
Review Unit 2 Cell/ Cell Transport

Directions Use the book pages 208-217 for cell transport, and 190-207 for cells. You may also want to look at any handouts or information gained in class.

1. "Hypo" means above "strength".
2. Active transport requires the use of cell energy to move materials through the cell membrane against the concentration gradient.
3. Diffusion is a specific term referring to the movement of small particles or liquids into the cell.
4. Facilitated diffusion moves substances passively through the membrane from high concentrations to low concentrations using carrier proteins.
5. phagocytosis is a specific term referring to the movement of large particles or solids into the cell.
6. Isotonic solutions have equal concentrations of solutes inside and outside the cell.
7. hypotonic solutions have lower concentrations of solutes outside the cell.
8. "hypertonic" solutions have higher concentrations of solutes outside the cell.
9. Passive transport allows substances to enter the cell without any energy being used from the cell.
10. A cell that is 70 percent water is placed into a 30 percent sugar water solution, what will happen to the cell? Water will move equally into of the cell. (Isotonic)
11. A concentration gradient refers to the difference between the high and low concentrations. (30% solute)
12. A cell that is 60 percent water is placed into a 30 percent sugar solution in water. What will happen to the cell? Water will move into of the cell. (40% solute)
13. A general term that refers to the bulk transport of large objects into the cell is Endocytosis.
14. Animal cells have no cell walls. When placed in hypotonic solutions animal cells may lysis or burst.
15. Because of osmosis, plant cells build up water pressure inside. This pressure is called turgor pressure.
16. Bulk movement of materials out of the cell is referred to as Exocytosis.
17. Cell membranes are selectively permeable, which means that they allow only certain substances to pass through.
18. Diffusion rates may be affected by: concentration, temperature, and distance.
19. Distilled water has no solutes and is therefore hypotonic to all cells.
20. Glucose enters cells through the process of facilitated diffusion. Passive Transport
21. Hypertonic solutions cause water to flow out of a cell. (like putting salt on a snail)
22. Hypotonic solutions cause water to flow into the cell.
23. If a cell that is 80 percent water is placed into a 30 percent sugar in water solution, what will happen to the cell? Water will move out of of the cell. (20% solute)
24. If a cell that is 80 percent water is placed into a distilled water solution, what will happen to the cell? Water will move water of the cell. (20%)

25. Osmosis and diffusion are examples of passive transport which take place without cell energy.
26. Osmosis depends on the concentration gradient on each side of the membrane which is determined by the concentration of solute dissolved in the water.
27. Some cells may pump out excess water through special organelles called contractile vacuoles. (Not on test)
28. Special protein molecules called Channel/transport proteins move some larger molecules through the membrane.
29. The bursting of cells due to osmosis is referred to as cytolysis.
30. The cell membrane is composed of a double layer of phospholipids with some proteins embedded in and through it.
31. The current model of membrane structure is called the Fluid Mosaic Model.
32. The diffusion of water through a selectively permeable membrane is termed OSMOSIS.
33. The prefix "hyper" means "above strength".
34. The prefix "iso" means "same strength".
35. The random motion of molecules (when first observed) was referred to as Brownian motion.
36. The random motion of molecules that occurs from a region of higher concentration to a region of lower concentration is called passive transport.
37. The shrinking of cells due to osmosis is referred to as hypertonic cell.
38. Water flows in and out of cells until it reaches equilibrium (isotonic) (equal concentrations). Then it continues then it to ~~flowing~~ in both directions in equal amounts.

39. Label this picture



40. What type of cell is this? Give evidence of how you know this.

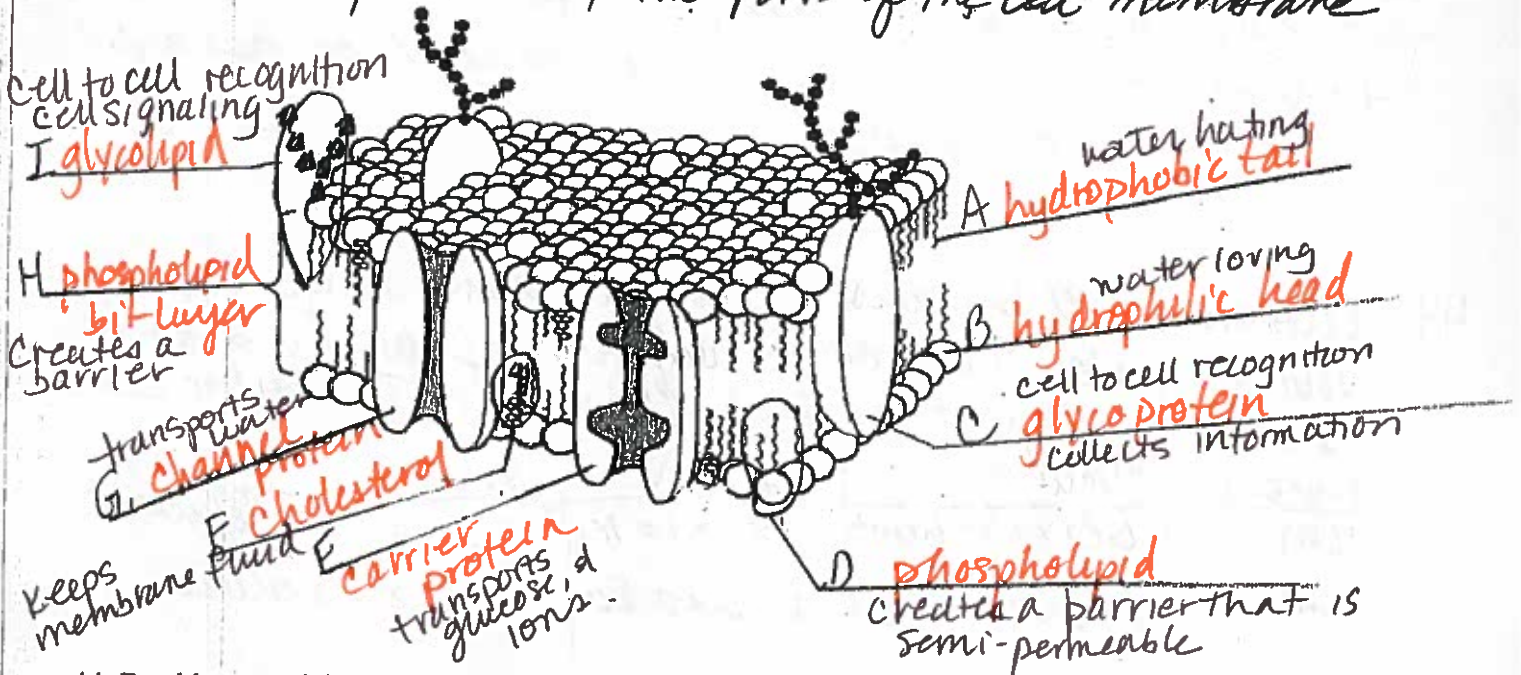
plant cell - chloroplast, cell wall

41. Fill in the function below

Label	Structure Name	Structure Function
1	Chloroplast	take sunlight & makes chemical energy like glucose - solar panel
2	Mitochondria	Converts glucose & fats into ATP
3	Golgi Apparatus	modifies & packages proteins & lipids
4	Smooth ER	makes lipids & detoxifies the cell
5	Large central vacuole	Large vacuole in plants full of enzymes, water, waste, food.
6	Nucleolus	Darkened portion of nucleus produces ribosomes & RNA
7	Nucleus	encloses genetic material - DNA in Eukaryotic cells
8	Cell Membrane	surround the cell, offers protection & provides shape semi-permeable
9	Ribosomes.	synthesize protein: located on rough ER

42. Why is the cell membrane referred to as a "Fluid Mosaic"? *Fluid - Always in motion.*
43. Explain what is meant by semi-permeable. How does this describe the cell membrane - give examples. *over*

* Know the functions of the parts of the cell membrane



44. Be able to explain why cells are small and give evidence by showing the math.
45. Know the difference in prokaryotes and eukaryotes. Be able to give specific examples into the differences. *Prokaryotes - No Nucleus - Bacteria Eukaryotes - Nucleus Plant, Animal, Fungus*
46. Cell Theory what are the 3 premises?
- All cells come from preexisting cells
 - Basic unit of life
 - All living things are made of cells

42. Fluid Mosaic:

The cell membrane is always in motion, proteins are changing position in phospholipid bi-layer

It is Mosaic of small pieces coming together to create the larger structure of the cell membrane. small pieces are

glycolipids
glycoproteins
cholesterol.
phospholipids

43. The Cell Membrane is semi permeable because it only lets some substances pass through, others have specific channels in order to pass through keeps unwanted or harmful things out of the cell

44 Cells are small because small cells have large SA to volume ratios that make diffusion of water & food extremely efficient so that it benefits the entire cell

cube size	SA	volume	ratio
1cm	$6(1 \times 1) = 6\text{cm}^2$	$1 \times 1 \times 1 = 1\text{cm}^3$	$6:1$ ← more efficient
2cm	$6(2 \times 2) = 24\text{cm}^2$	$2 \times 2 \times 2 = 8\text{cm}^3$	$24:8 = \text{reduces } 3:1$

★ - Also Make sure to know 2 Types Active Transport

① Endocytosis
A receptor mediated
B phagocytosis
C pinocytosis

② Exocytosis
* low to high
* Requires energy