

Test Review Questions:

- In many cells, the structure that controls the cell's activities is the
 - cell membrane.
 - organelle.
 - nucleolus.
 - nucleus.
- Despite differences in size and shape, all cells have cytoplasm and a
 - cell wall.
 - cell membrane.
 - mitochondrion.
 - nucleus.
- If a cell of an organism contains a nucleus, the organism is a(an)
 - plant.
 - eukaryote.
 - animal.
 - prokaryote.
- Distinct threadlike structures containing genetic information are called
 - ribosomes.
 - chromosomes.
 - nuclei.
 - mitochondria.
- Which organelle converts the chemical energy in food into a form that cells can use?
 - nucleolus
 - chromosome
 - mitochondrion
 - chloroplast
- Cell membranes are constructed mainly of
 - lipid bilayers.
 - protein pumps.
 - carbohydrate gates.
 - free-moving proteins.
- The movement of water molecules across a selectively permeable membrane is known as
 - exocytosis.
 - phagocytosis.
 - endocytosis.
 - osmosis.
- A substance that moves across a cell membrane without using the cell's energy tends to move
 - away from the area of equilibrium.
 - away from the area where it is less concentrated.
 - away from the area where it is more concentrated.
 - toward the area where it is more concentrated.

low \rightarrow high
high \rightarrow low

12. How are prokaryotic and eukaryotic cells alike? How do they differ?

Both have cell membrane, cytoplasm and genetic information [DNA]

Prokaryotes lack a "true nucleus", simpler, primitive

Eukaryotic true nucleus [membrane bound], many structures, more advanced

14. What is the function of a ribosome?

Ribosomes produce proteins

15. What process takes place in the rough endoplasmic reticulum?

Helps to produce proteins

16. Describe the role of the Golgi apparatus.

Attach carbohydrates and lipids to proteins. Get proteins ready for their final destination.

19. Briefly describe the structure of a cell membrane. How does the cell membrane affect the contents of a cell?

*** Semi-permeable, Phospholipid bilayer with protein channels embedded in it**

phosphate heads
lipid tails

20. What is meant by the concentration of a solution?

Mass of solute in a given volume of solution

21. Describe the process of diffusion. Name and describe the condition that exists when the diffusion of a particular substance is complete.

In diffusion, particles move from an area of high concentration to an area of low concentration. WITHOUT USING ENERGY.

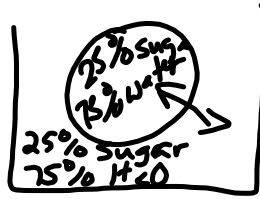
When diffusion is complete the system will be at equilibrium.

22. What is the relationship between osmosis and diffusion? By definition, what's the only substance that carries out osmosis?

*Both osmosis and diffusion are forms of passive transport

Osmosis is diffusion of water across a semipermeable water without using energy. Jalve 2

23. Using the example of a cell in a sugar solution, explain what is meant by an isotonic solution.

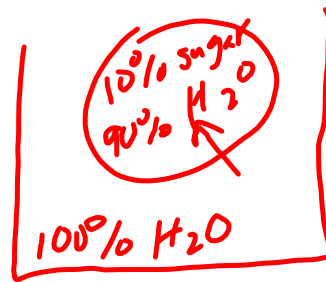


The concentration of solute [sugar] is equal inside and outside cell!

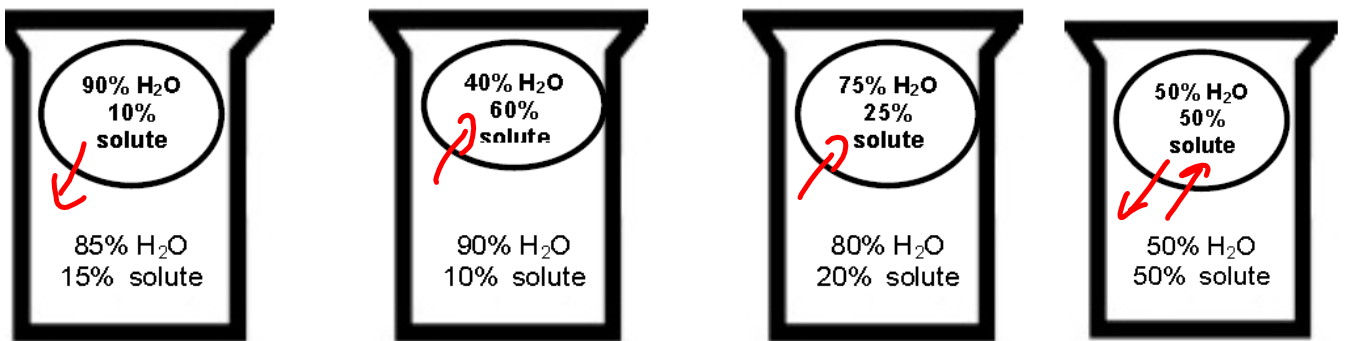
24. Name and describe the cell structure that helps prevent damage to certain cells when they are subjected to high osmotic pressure.

cell wall

Potential for a plant cell to burst
what conditions must be present?



hypotonic



hypertonic

high conc of solute outside cell water moves out,

①

hypotonic

low conc of solute outside cell water moves in.

①

hypotonic

Isotonic
equal conc of solute inside/outside cell. Water molecules move back and forth.

①

A scientist testing the affects of a chemical on apple yield sprays an orchard with the chemical. A second orchard does not receive the chemical. In the fall, the number of apples harvested from each forest is counted. Which of the following is the independent (manipulated) variable in the experiment?

- the chemical
- the number of apples
- the first orchard
- the second orchard

- Scientific method [application]
- hypothesis
- abiogenesis, spontaneous generation, biogenesis
- Redi, Pasteur
- cell theory
- eukaryotic vs prokaryotic cells
- cell membrane [structure and function]
- organelles[nucleus, nucleolus, ribosomes, endoplasmic reticulum [smooth, rough], lysosomes, golgi apparatus, mitochondria, microtubules, microfilaments, chloroplast]
- passive transport [diffusion]
- osmosis [define]
- isotonic, hypertonic, hypotonic
- Active Transport
- phagocytosis/pinocytosis
- microscope

Attachments

section 1-2.notebook

section7-3.notebook

cellsection7-22012.notebook