

Name: _____

Period: _____

Date: _____

Biology
Mr. Croft

Homeostasis & Transport Review Sheet

- _____ 1. Substances that can pass through cell membranes by diffusion include
A. Na^+ ions. B. Cl^- ions. C. glucose. D. oxygen.
- _____ 2. The contractile vacuole of a paramecium should be active when the paramecium is in
A. an isotonic environment. B. a hypotonic environment.
C. a hypertonic environment. D. any environment.
- _____ 3. When a human red blood cell is placed in a hypotonic environment, it will
A. undergo cytolysis. B. undergo plasmolysis.
C. experience a decrease in turgor pressure. D. be at equilibrium.
- _____ 4. Facilitated diffusion is often used to transport
A. ions.
B. water.
C. molecules that are not soluble in lipids.
D. molecules that are too small to diffuse across the membrane.
- _____ 5. Na^+ ions enter cells by
A. diffusing across the lipid bilayer without assistance.
B. diffusing through Na^+ ion channels.
C. binding to Na^+ carrier proteins.
D. binding to Cl^- ions.
- _____ 6. Facilitated-diffusion carrier proteins and cell-membrane pumps both
A. require an input of energy.
B. are specific for the kinds of substances they transport.
C. transport substances up their concentration gradients.
D. carry out active transport.
- _____ 7. The sodium-potassium pump transports
A. Na^+ out of the cell and K^+ into the cell.
B. Na^+ and K^+ in both directions across the cell membrane.
C. K^+ out of the cell and Na^+ into the cell.
D. Na^+ during some cycles and K^+ during other cycles.
- _____ 8. The energy needed to power the sodium-potassium pump is provided by the
A. binding of ATP to the pump. B. transport of ATP by the pump.
C. splitting of ATP. D. formation of ATP.
- _____ 9. Pinocytosis involves the transport of
A. large particles out of a cell. B. fluids into a cell.
C. whole cells into another cell. D. lysosomes out of a cell.
- _____ 10. Exocytosis is a
A. type of passive transport.
B. mechanism by which cells ingest other cells.
C. transport process in which vesicles are formed from pouches in the cell membrane.
D. way for cells to release large molecules, such as proteins.

1) STRUCTURES AND FUNCTIONS

The drawings below show the appearance of a red blood cell and a plant cell in isotonic, hypotonic, and hypertonic environments. Label each environment in the spaces provided.

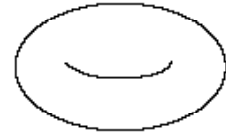
RED BLOOD CELL



a _____

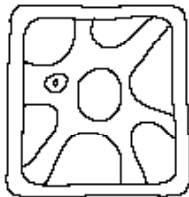


b _____



c _____

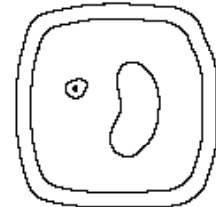
PLANT CELL



d _____



e _____



f _____

2) STRUCTURES AND FUNCTIONS

Use the figure to answer the following questions.

- The diagrams below represent the six steps in one cycle of the sodium-potassium pump. The order of the steps has been scrambled. Beginning with diagram *d* (numbered 1), sequence the remaining diagrams by writing the appropriate numeral in each blank.
- On which side of the membrane are Na^+ ions released from the pump? _____
- On which side of the membrane are K^+ ions released from the pump? _____

