worksheetslist.com

Cell Transport Review Worksheet

Instructions: Answer the following questions related to cellular transport processes.

Multiple Choice: Choose the correct answer.

1. Which type of cellular transport does not require energy?
a) Active transport
b) Facilitated diffusion
c) Osmosis
d) Passive transport

2. The movement of water across a semipermeable membrane is called:
a) Active transport
b) Facilitated diffusion
c) Osmosis
d) Endocytosis

3. In which direction does water move in hypertonic solutions?
a) Into the cell
b) Out of the cell
c) Both into and out of the cell
d) It stays the same

True or False: Indicate whether the statement is true or false.

4. Passive transport requires energy from the cell.
- True / False

5. Exocytosis is a process by which cells take in large particles by engulfing them.
- True / False

6. The sodium-potassium pump is an example of active transport.
- True / False

Short Answer: Provide concise answers.

7. Define osmosis.

8. Differentiate between isotonic, hypertonic, and hypotonic solutions.

9. Explain the role of transport proteins in facilitated diffusion.

10. How does endocytosis differ from exocytosis?

Diagram Interpretation:

11. Examine the following diagram and describe the type of cellular transport occurring. Label the key components.

[Insert Diagram Here]

Bonus Question: Critical Thinking

12. Imagine a scenario where a cell is placed in a hypotonic solution. Predict and explain what would happen to the cell.

Answers:

1. d) Passive transport
2. c) Osmosis
3. b) Out of the cell
4. False
5. False
6. True
7. Osmosis is the passive movement of water molecules across a selectively permeable membrane from an area of lower solute concentration to an area of higher solute concentration.
8. - Isotonic solution: The concentration of solutes inside and outside the cell is the same, resulting in no net movement of water.
- Hypertonic solution: The concentration of solutes outside the cell is higher, causing water to move out of the cell.
- Hypotonic solution: The concentration of solutes outside the cell is lower, leading to water moving into the cell.
9. Transport proteins assist in the facilitated diffusion of molecules that are too large or polar to pass through the lipid bilayer. They create channels or carriers to allow specific substances to cross the membrane.
10. Endocytosis is the process of engulfing large particles by forming vesicles within the cell membrane. Exocytosis involves expelling substances from the cell by fusing vesicles with the cell membrane.
11. [Answer will depend on the provided diagram]
12. The cell would likely swell and potentially burst (lyse) due to an influx of water. The hypotonic solution has a lower solute concentration than the cell's interior, causing water to move into the cell to equalize concentrations.

Feel free to customize the worksheet by adding more questions or adjusting the level of complexity based on the students' knowledge and the learning objectives.