Osmosis And Diffusion Worksheet Answer Key PDF

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Part 1: Building a Foundation

What is the primary driving force behind diffusion?

undefined. A) Temperature

undefined. B) Concentration Gradient ✓

undefined. C) Pressure

undefined. D) Membrane Permeability

The primary driving force behind diffusion is the concentration gradient.

Which of the following statements are true about osmosis?

undefined. A) It involves the movement of solutes.

undefined. B) It occurs across a selectively permeable membrane. ✓

undefined. C) It moves water from high to low concentration. ✓

undefined. D) It is a type of passive transport. ✓

Osmosis involves the movement of water across a selectively permeable membrane.

Explain the concept of selective permeability and its importance in cellular function.

Selective permeability allows cells to control their internal environment by regulating the movement of substances.

List two examples of diffusion occurring in everyday life.

1. Example 1

The smell of perfume spreading in a room.

2. Example 2

Sugar dissolving in coffee.

Examples of diffusion include the smell of perfume spreading in a room and sugar dissolving in coffee.

Part 2: Comprehension and Application

Which scenario best illustrates osmosis?

undefined. A) Sugar dissolving in water
undefined. B) Oxygen entering the bloodstream
undefined. C) Water entering a plant cell in a hypotonic solution ✓
undefined. D) Perfume scent spreading in a room

Water entering a plant cell in a hypotonic solution best illustrates osmosis.

What factors can affect the rate of diffusion?

undefined. A) Temperature ✓
undefined. B) Surface Area ✓
undefined. C) Molecular Size ✓
undefined. D) Color of the Substance

Factors affecting diffusion rate include temperature, surface area, and molecular size.

Predict what would happen to a freshwater fish placed in saltwater and explain why.

The fish would likely dehydrate and die due to osmosis causing water to leave its cells.

If a cell is placed in a hypertonic solution, what is the expected outcome?

undefined. A) The cell will swell.
undefined. B) The cell will shrink. ✓
undefined. C) The cell will remain unchanged.
undefined. D) The cell will burst.

The cell will shrink when placed in a hypertonic solution due to water leaving the cell.

Part 3: Analysis, Evaluation, and Creation

Which of the following best describes the relationship between osmosis and cell turgor pressure?

undefined. A) Osmosis decreases turgor pressure.
undefined. B) Osmosis increases turgor pressure. ✓
undefined. C) Osmosis has no effect on turgor pressure.
undefined. D) Osmosis only affects animal cells.

Osmosis increases turgor pressure, which helps maintain cell structure.

Analyze the effects of temperature on diffusion rate. Which statements are correct?

undefined. A) Higher temperatures increase diffusion rate. ✓
undefined. B) Lower temperatures decrease diffusion rate. ✓
undefined. C) Temperature has no effect on diffusion.
undefined. D) Diffusion is faster in gases than in liquids at the same temperature. ✓

Higher temperatures increase diffusion rate, while lower temperatures decrease it.

Compare and contrast osmosis and diffusion, highlighting their similarities and differences.

Osmosis is a specific type of diffusion involving water, while diffusion refers to the movement of any particles.

Which method would be most effective for demonstrating osmosis in a classroom experiment?

undefined. A) Using a sugar solution and a potato ✓
undefined. B) Observin food coloring in water
undefined. C) Measuring the spread of a scent
undefined. D) Weighin a balloon before and after inflation

Using a sugar solution and a potato is an effective method to demonstrate osmosis.

Design an experiment to test the effects of different solute concentrations on the rate of osmosis. Include your hypothesis, materials, and procedure.

The experiment should outline a clear hypothesis, list materials, and detail the procedure for testing osmosis.