

Osmosis and Diffusion Quiz Answer Key PDF

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What is the outcome when equilibrium is reached in diffusion?

- A. Movement stops completely
- B. Net movement of particles stops ✓**
- C. Particles move faster
- D. Particles move to one side

In which part of the human body does diffusion play a critical role in gas exchange?

- A. Stomach
- B. Lungs ✓**
- C. Kidneys
- D. Liver

Explain how temperature affects the rate of diffusion.

- A. Temperature has no effect on diffusion
- B. Higher temperatures decrease diffusion rate
- C. Temperature affects diffusion rate positively ✓**
- D. Temperature only affects gases

What type of membrane is essential for osmosis to occur?

- A. Permeable
- B. Impermeable
- C. Semi-permeable ✓**
- D. Non-permeable

Which factor does NOT affect the rate of diffusion?

- A. Temperature
- B. Color of the substance ✓**
- C. Surface Area
- D. Concentration Difference

What is a common misconception about osmosis?

- A. It involves water movement
- B. It requires energy ✓**
- C. It occurs across a semi-permeable membrane
- D. It moves towards equilibrium

Which of the following factors can increase the rate of diffusion? (Select all that apply)

- A. Higher temperature ✓**
- B. Larger molecule size
- C. Greater concentration difference ✓**
- D. Smaller surface area

What are the roles of diffusion in biological systems? (Select all that apply)

- A. Transport of nutrients ✓**
- B. Gas exchange ✓**
- C. Energy production
- D. Waste removal ✓**

Which processes are examples of diffusion in the human body? (Select all that apply)

- A. Oxygen exchange in the lungs ✓**
- B. Nutrient absorption in the intestines ✓**
- C. Water reabsorption in the kidneys
- D. Hormone secretion in glands

Discuss the importance of osmosis in maintaining plant cell structure.

- A. Osmosis is not important for plants
- B. Osmosis helps in nutrient absorption

C. Osmosis maintains turgor pressure ✓

D. Osmosis only occurs in animal cells

Describe an experiment that can demonstrate osmosis using household items.

A. Soak bread in water

B. Use sugar in water with eggs

C. Place potato slices in saltwater ✓

D. Boil vegetables in water

What role does diffusion play in the process of cellular respiration?

A. Diffusion is not involved in respiration

B. Diffusion helps in gas exchange ✓

C. Diffusion only occurs in plants

D. Diffusion is an active process

Which of the following is an example of osmosis in plants?

A. Photosynthesis

B. Water uptake by roots ✓

C. Respiration

D. Seed germination

Which of the following are true about the relationship between osmosis and homeostasis? (Select all that apply)

A. Osmosis helps maintain fluid balance ✓

B. Osmosis disrupts homeostasis

C. Osmosis regulates cell turgor ✓

D. Osmosis only occurs in animals

Explain why osmosis is considered a passive transport mechanism and not an active one.

A. It requires energy

B. It is a passive process ✓

C. It only occurs in plants

D. It is an active transport mechanism

What are the characteristics of a semi-permeable membrane? (Select all that apply)

A. Allows all substances to pass

B. Allows only certain substances to pass ✓

C. Blocks all substances

D. Essential for osmosis ✓

Which of the following best describes osmosis?

A. Movement of solutes across a membrane

B. Movement of water across a semi-permeable membrane ✓

C. Movement of gases in the lungs

D. Movement of particles in a solid

Which statements about osmosis are true? (Select all that apply)

A. It involves the movement of solutes

B. It is a passive process ✓

C. It requires a semi-permeable membrane ✓

D. It moves water towards higher solute concentration ✓

What is the primary driving force behind diffusion?

A. Temperature

B. Concentration Gradient ✓

C. Pressure

D. Surface Area

How does the concentration gradient influence the direction and rate of diffusion?

A. It has no effect on diffusion

B. It slows down diffusion

C. It increases the rate of diffusion ✓

D. It only affects gas diffusion