Part A: Diffusion

1. Describe two factors that could speed up the rate of diffusion. **(0.5 pt)**

2. At what point does net diffusion end? **(0.5 pt)**

» Answer

3. The video discusses five factors that can affect the rate of diffusion. List one and explain it using your own words. **(1 pt)**

» Answer

4. Identify a biological situation in which efficient diffusion of a solute from one region to another would be a matter of life or death for an organism. Please describe that situation, and what factors would influence the diffusion. **(1 pt)**

» Answer

Part B: Osmosis and Tonicity; Simulation

5. Explain one way that osmosis differs from diffusion, and one wya that it is similar. **(1 pt)**

» Answer

6. How long will the dialysis tubes remain in each beaker? Why does this matter? **(1 pt)**

» Answer

Table 1: Caption

Trial	A	B	C	D	E
Beaker % Sugar					
Dialysis Tube% sugar					
Initial Mass (g)					
Final Mass (g)					
Δ Mass (g)					

7. Name two variables that remained constant throughout the lab. **(1 pt)**

» Answer

8. Name the *dependent* variable. **(1 pt)**

» Answer

9. Name the *independent* variable.**(1 pt)**

» Answer

The percent concentration of both fluids is different. There is % sugar in the beaker and % sugar in the dialysis tube. Now, think of it from the water's point of view. There is % water in the beaker and % in the dialysis tube

10. Answer the following:

(a) Did the beaker have a higher/lower concentration of water than the dialysis tube? **0.5 pt**

» Answer

(b) Did the water flow in or out of the tube and what type of diffusion is this? **0.5 pt**

» Answer

11. Answer the following:

(a) Which beaker had a higher concentration of sugar solution fluid outside than inside? **0.5 pt**

» Answer

(b) How will the water flow in this situation? If the tube was a cell, what type of solution was the cell placed in? **0.5 pt**

» Answer

12. Answer the following:

(a) Which beaker had a percent concentration that was equal on both inside/outside the cell? **0.5 pt**

» Answer

(b) How will the water flow in this situation? What type of solution was the cell (tube) placed in? **0.5 pt**

» Answer

13. Answer the following:

(a) Which beaker has a higher concentration of sugar solution inside the cell than outside? **0.5 pt**

» Answer

(b) How will the water flow in this situation? What type of solution was the cell (tube) placed in? **0.5 pt**

» Answer

14. Graphically represent the results of today's simulation. **(2 pts)**

» Answer

Part C: Regulatory Mechanisms

15. Describe one challenge inherent to being a marine organism. **(1 pt)**

» Answer

16. Describe one challenge inherent to being a freshwater organism. **(1 pt)**

» Answer

17. What mechanisms have evolved to compensate for these challenges for both types of organisms? **(1 pt)**

» Answer

18. Describe mechanisms that have evolved to facilitate organisms that switch from freshwater to marine environments. **(2 pts)**

» Answer