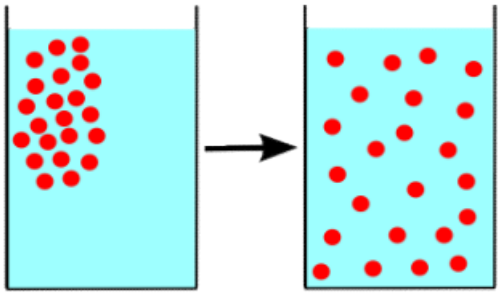
Name: Class:

Total Possible Marks: 27

Diffusion



___ 1

1. Diffusion is the gradual movement of particles from areas of low concentration to areas of high concentration, is this true or false?

   (A) True

   (B) False

___ 6

2. If a person releases an aerosol of air freshener in the corner of a room, people nearest to it, will smell it first. People on the far side of the room will smell it but it will be much later. Using your knowledge of diffusion (and in particular using the definition) and collision theory, draw and annotate a simple diagram or write a short paragraph explaining why this is.

___ 11

3. (a)_____ takes place across cell (b)_____. Cell membranes (c)_____ the cell together but they allow certain (d)_____ substances to pass across them. Only very (e)_____ molecules can diffuse through cell membranes, such as (f)_____, (g)_____, (h)_____ acids and (i)_____. Larger molecules like (j)_____ and (k)_____ can't fit through the membrane.

Diffusion	water	dissolved	hold	glucose
membranes	small	starch	oxygen	proteins
amino				

___ 1

4. Which of the molecules shown below can diffuse through the walls of the cell membrane?

   (A) Glucose

   (B) Water

   (C) Protein

   (D) Starch

   (E) Amino acids

   (F) Oxygen

___ 1

5. When cells respire they produce carbon dioxide as a waste product. The carbon dioxide diffuses from the cells into the bloodstream so that it can then be removed from the body. Is carbon dioxide concentration greater in the bloodstream or inside the respiring cells, explain your answer.

___ 2

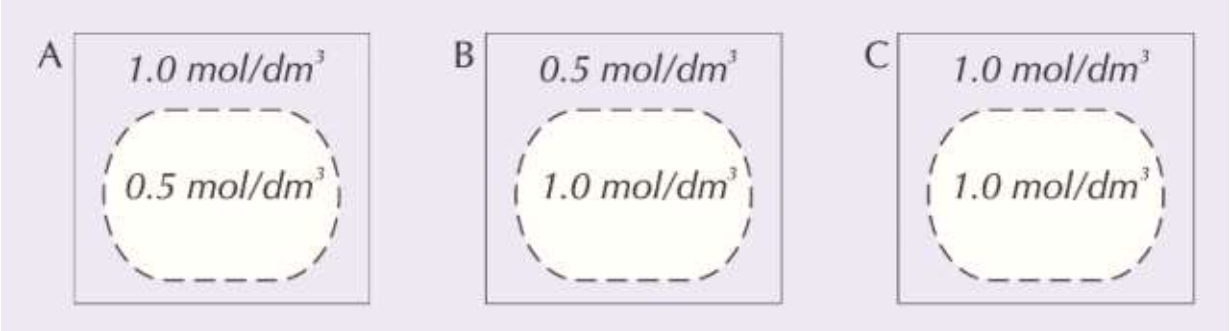
6. You are in a nightclub, the DJ activates the smoke machine during a dance. The smoke machine is situated at the front of the stage.

___ 1 A. Explain how the smoke reaches the people standing at the far end of the room.

___ 1 B. 5 minutes later the DJ activates smoke machine again. Explain how the rate of diffusion of the smoke is now different from the first time the DJ activated the machine.

___ 5

7.



The diagrams show 3 cells in different glucose solutions. The concentration of glucose inside and outside the cell is shown in each case.

___ 1 A. Which diagram shows a situation where the net movement of glucose will be out of the cell, would it be A B or C?

___ 4 B. Explain, in a few lines, your choice for part a above.