

Osmosis/Diffusion Worksheet

1. Circle the correct answer:

a. When red blood cells are placed in an isotonic solution they:

swell stay the same shrink

b. Red blood cells are isotonic to which solution:

distilled water 0.2% NaCl 0.9% NaCl 2.0% NaCl

c. Red blood cells placed in a 2.0% glucose solution would:

swell stay the same shrink

d. When red blood cells are placed in distilled water:

the water enters the cells the water leaves the cells
 the water does not move the salts in the cells leave the cells

e. Red blood cells placed in a 0.2% sodium chloride solution would:

swell stay the same shrink

2. Three bottles are filled with three different solutions. One with distilled water, one with 0.9% NaCl solution and the third with 9.0% NaCl solution. Imagine red blood cells being placed in the three bottles and left in the solutions for an hour.

The cells in bottle A stay the same

The cells in bottle B shrink

The cells in bottle C swell

a. Which bottle contains the most concentrated salt solution? A B C

b. Which bottle contains distilled water? A B C

c. Which bottle contains the isotonic salt solution? A B C

d. Which bottle contains the hypotonic solution? A B C

e. Which bottle contains the hypertonic salt solution? A B C

Answers

1.

- a. stay the same
- b. 0.9% NaCl
- c. shrink
- d. the water enters the cells
- e. swell

2.

- a. B (the most concentrated would be the most hypertonic, resulting in greater shrinkage)
- b. C (distilled water would hypotonic, resulting in swelling)
- c. A (the isotonic solution would allow the volume to remain the same)
- d. C
- e. B