

## Default Question Block

Remember, it is not necessary to answer every question correctly, please just do the best you can.

You have 1 minute to complete the following question.

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All cell membranes are:

- semipermeable
- permeable

Consider your response from the previous question (shown below) to answer the following question.

You have 1 minute to complete the following question.

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*Previous question:*

All cell membranes are:

*Your selected answer:*

**\${q://QID1/ChoiceGroup/SelectedChoices}**

The reason for my answer is because cell membranes:

- allow free movement of materials into or out of the cell.
- allow some substances to enter the cell, while they prevent all substances from leaving.
- allow only beneficial materials to enter the cell.
- allow some substances to pass through, but not others.

You have 1 minute to complete the following question.

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During the process of diffusion, particles will generally move from:

- high to low concentration
- low to high concentration

You have 1 minute to complete the following question.

Consider your response from the previous question (shown below) to answer the following question.

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*Previous question:*

During the process of diffusion, particles will generally move from:

Your selected answer:

**\${q://QID9/ChoiceGroup/SelectedChoices}**

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The reason for my answer is because:

- crowded particles want to move to an area with more room.
- the random motion of particles suspended in a fluid results in their uniform distribution.
- the particles tend to keep moving until they are uniformly distributed and then they stop moving.
- there is a greater chance of the particles repelling each other.

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You have 1 minute to complete the following question.

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If a small amount of salt (1 tsp) is added to a large container of water (4 liters or 1 gal) and allowed to set for several days without stirring, the salt molecules will:

- be more concentrated on the bottom of the water.
- be evenly distributed throughout the container.

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You have 1 minute to complete the following question.

Consider your response from the previous question (shown below) to answer the following question.

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*Previous question:*

If a small amount of salt (1 tsp) is added to a large container of water (4 liters or 1 gal) and allowed to set for several days without stirring, the salt molecules will:

Your selected answer:

**\${q://QID13/ChoiceGroup/SelectedChoices}**

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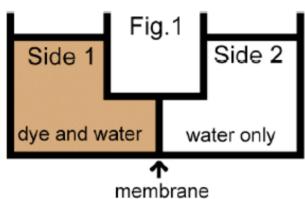
The reason for my answer is because:

- salt is heavier than water and will sink.
- salt dissolves poorly or not at all in water.
- there will be more time for settling.
- there is movement of particles from a high to low concentration.

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You have 1 minute to complete the following question.

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In Figure 1, two columns of water are separated by a semipermeable membrane through which only water molecules can pass. Side 1 contains brown dye and water; Side 2

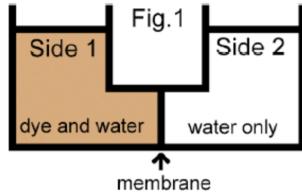
contains pure water. After two hours, the water level in Side 1 will be ...

- higher than in Side 2.
- lower than in Side 2.
- the same height as in side 2.

You have 1 minute to complete the following question.

Consider your response from the previous question (shown below) to answer the following question.

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*Previous question:*

In Figure 1, two columns of water are separated by a semipermeable membrane through which only water molecules can pass. Side 1 contains brown dye and water; Side 2 contains pure water. After two hours, the water level in Side 1 will be ...

*Your selected answer:*

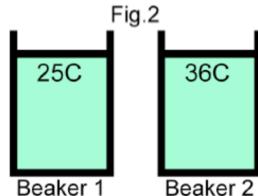
**\${q://QID18/ChoiceGroup/SelectedChoices}**

The reason for my answer is because:

- water will move from high to low solute concentration.
- water flows freely and maintains equal levels on both sides.
- the concentration of water molecules is less on Side 1.
- water moves from low to high water concentration.

You have 1 minute to complete the following question.

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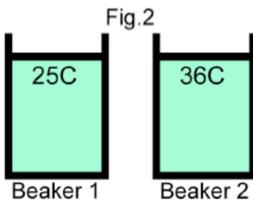
Suppose there are two large beakers with equal amounts of clear water at two different temperatures (see Figure 2). Next, a drop of green dye is added to each beaker of water. Eventually the water turns light green. In which beaker does the water become evenly colored light green first?

- Beaker 1
- Beaker 2

You have 1 minute to complete the following question.

Consider your response from the previous question (shown below) to answer the following question.

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*Previous question:*

Suppose there are two large beakers with equal amounts of clear water at two different temperatures (see Figure 2). Next, a drop of green dye is added to each beaker of water. Eventually the water turns light green. In which beaker does the water become evenly colored light green first?

*Your selected answer:*

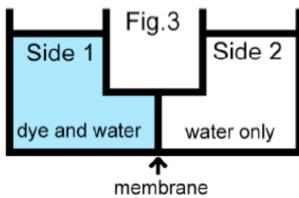
**\${q://QID23/ChoiceGroup/SelectedChoices}**

The reason for my answer is because:

- the dye breaks down more quickly.
- moving slower makes it easier for the molecules to move.
- the dye molecules move faster.
- temperature changes the size of the molecules.

You have 1 minute to complete the following question.

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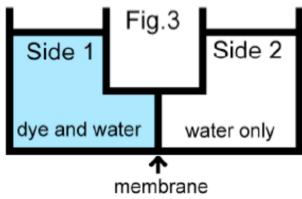
A water-based solution is placed on the left side of a container that is divided by a semipermeable membrane (Figure 3). Pure water is on the right. As time passes, the right side gradually becomes blue, while the blue color on the left side becomes lighter. This suggests that:

- the level of the liquids on both sides will remain the same.
- the level of the liquid will decrease on Side 1 and increase on Side 2.
- the level of the liquid will increase on Side 1 and decrease on Side 2.

You have 1 minute to complete the following question.

Consider your response from the previous question (shown below) to answer the following question.

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*Previous question:*

A water-based solution is placed on the left side of a container that is divided by a semipermeable membrane (Figure 3). Pure water is on the right. As time passes, the right side gradually becomes blue, while the blue color on the left side becomes lighter. This suggests that:

*Your selected answer:*

**\${q://QID28/ChoiceGroup/SelectedChoices}**

The reason for my answers is that:

- water and dye can both pass through the membrane.
- the dye can pass through the membrane but moves more slowly than water.
- the dye moves into Side 2 and raises the level of the liquid.
- atmospheric pressure will always produce equal water levels.

You have 1 minute to complete the following question.

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When a living human blood cell is placed in pure fresh water, the cell will:

- shrivel up.
- swell and burst.
- remain the same.

You have 1 minute to complete the following question.

Consider your response from the previous question (shown below) to answer the following question.

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*Previous question:*

When a living human blood cell is placed in pure fresh water, the cell will:

*Your selected answer:*

**\${q://QID32/ChoiceGroup/SelectedChoices}**

The reason for my answer is because:

- water molecules move from higher concentration of dissolved particles to lower concentration of dissolved particles.
- a cell has homeostasis and will maintain itself.
- the cell loses stability outside the human body.
- water molecules move from higher concentration of water to lower concentration of water.

You have 1 minute to complete the following question.

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Suppose you add a drop of blue dye to a container of clear water and after several hours the fluid is evenly colored light blue. At this time, the molecules of dye:

- have stopped moving.
- continue to move around randomly.

You have 1 minute to complete the following question.

Consider your response from the previous question (shown below) to answer the following question.

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*Previous question:*

Suppose you add a drop of blue dye to a container of clear water and after several hours the fluid is evenly colored light blue. At this time, the molecules of dye:

*Your selected answer:*

**\${q://QID36/ChoiceGroup/SelectedChoices}**

The reason for my answer is because:

- molecules move until they are evenly distributed, and then they stop.
- if the dye molecules stopped, they would settle to the bottom of the container.
- when molecules are evenly distributed, they still continue to move.
- this is a liquid system. If it were a solid the molecules would stop moving.

You have 1 minute to complete the following question.

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Fig. 4

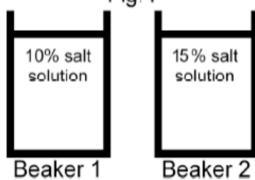


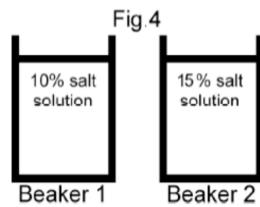
Figure 4 depicts a case where two water solutions have just been introduced into two identical beakers. The volume of the solution in each beaker is the same. At this point, Beaker 1 contains:

- more water than Beaker 2.
- less water than Beaker 2.
- the same amount of water as Beaker 2.

You have 1 minute to complete the following question.

Consider your response from the previous question (shown below) to answer the following question.

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*Previous question:*

Figure 4 depicts a case where two water solutions have just been introduced into two identical beakers. The volume of the solution in each beaker is the same. At this point, Beaker 1 contains:

*Your selected answer:*

**\${q://QID41/ChoiceGroup/SelectedChoices}**

The reason for my answer is because:

- the liquids are the same heights in both beakers
- water in Beaker 1 contains more dissolved particles.
- water in Beaker 1 contains fewer dissolved particles.