

Chapter 39

History for 'Chapter 39 Pre-Class Assignment'

Item: Chapter 39 Pre-Class Assignment

Score: 100% (Calculated)

Due: Wednesday, November 12, 2014 8:00 AM

Submitted: Tuesday, November 11, 2014 12:25 AM

Answers: 1. If the partial pressure of oxygen (pO_2) in a man's blood plasma decreased below that in his red blood cells, what would be the result?

- More oxygen would diffuse into his red blood cells and be transported throughout his body.
- Oxygen would diffuse out of his red blood cells, and less oxygen would be transported throughout his body.
- The concentration of oxygen would be the same in red blood cells and blood plasma.

Score: 1 of 1

2. Which of the following will **not** pass through the phospholipid bilayer of a membrane?

- carbon dioxide
- sodium ions
- molecular oxygen

Score: 1 of 1

- ✓ 3. The random thermal motion of molecules from a region of higher concentration to a region of lower concentration is called diffusion. The rate of diffusion across a barrier is defined by Fick's law of diffusion:

$$\text{Rate of diffusion} = k * A * (C_2 - C_1) / D$$

k = diffusion coefficient, which depends on solubility and temperature

A = surface area for exchange

$C_2 - C_1$ = difference in partial pressure of gas on either side of the barrier

D = thickness of the barrier to diffusion

In the design of respiratory systems, 1 and 2 represent membrane barriers between the outside medium and the inside of the organism.

Respiratory Membrane 1



Biology: How Life Works
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Respiratory Membrane



Which would have the higher rate of diffusion, Respiratory Membrane 1 or Respiratory Membrane 2?

- Respiratory Membrane 1
- Respiratory Membrane 2

Score: 1 of 1

- ✓ 4. A man visits a doctor, and discovers that, due to tumors, he needs to get both of his carotid bodies removed. What processes will their removal affect in his body? Select all correct choices.

- His body will not be able to sense the oxygen concentration of brain-bound blood.
- His body will not be able to sense the CO₂ concentration of brain-bound blood.
- His body will not be able to sense the oxygen concentration of body-bound blood.
- His body will not be able to sense the CO₂ concentration of body-bound blood.

Score: 1 of 1

- ✓ 5. Which of the following blood vessels carry CO₂-rich (and oxygen-poor) blood back to the heart? Select all correct choices.

- venules
- arterioles
- veins
- arteries
- capillaries

Score: 1 of 1

6. Which of the following animals has a heart in which oxygenated and deoxygenated blood mix?
- human
 - frog
 - mammal
 - bird
 - fish

Score: 1 of 1

7. The pacemaker of the mammalian heart is: (select all correct answer options)
- an electrically charged region of the pulmonary vein.
 - a group of specialized cardiac fibers that initiate the heart beat.
 - modulated by signals from the nervous system.
 - a group of fibers located between the atrium and the ventricle called the AV node.

Score: 1 of 1

8. During the _____ phase of the cardiac cycle, blood enters the ventricles and exits the ventricles during the _____ phase.
- systole; diastole
 - diastole; systole
 - refractory; systole
 - diastole; refractory

Score: 1 of 1

9. Insects possess _____, circulatory systems in which hemolymph completely “bathes” the organs and is not typically contained in distinct arteries or veins.