

9. The diagram below represents one of many microscopic air sacs in a human lung. The alveolar (air sac) is the place where oxygen (O_2) and carbon dioxide (CO_2) move into or out of the blood, as represented in the diagram.

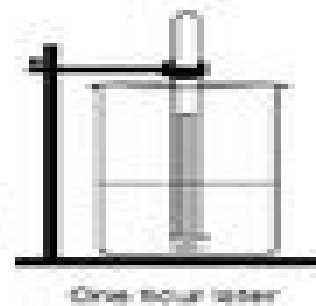
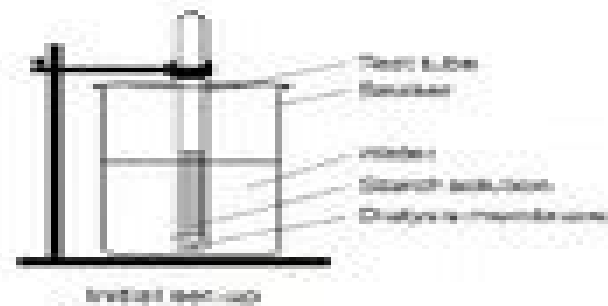


Which statement best explains why the O_2 gases are able to move in the direction shown in the diagram?

- The CO_2 moves out of the capillary and into the alveolus to make more room for the blood to carry O_2 .
- The O_2 is needed by the cells, so it is actively transported into the blood. The CO_2 , which is not needed, is actively transported out of the blood.
- The blood coming to the lungs is low in CO_2 and high in O_2 , so the gases each diffuse from a lower to a higher concentration in this area.
- The blood coming to the lungs is high in CO_2 and low in O_2 , so the gases each diffuse from a higher to a lower concentration in this area.

Base your answers to questions 10 and 11 on the diagram below and on your knowledge of biology. The diagram represents a laboratory setup.

A starch solution in a test tube was separated from the water in a beaker by a dialysis membrane. One hour later, it was observed that the liquid had risen in the test tube.



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