

Circulatory and Respiratory Systems

Dhanush S. Banka

October 11, 2019

1 Questions

1) What would be expected if the amount of interstitial fluid surrounding the capillary beds of the lungs were to increase significantly?

A) The amount of carbon dioxide entering the lungs from the blood would increase.

B) The amount of oxygen entering the circulation from the lungs would increase.

C) The amount of oxygen entering the circulation from the lungs would decrease.

D) The pressure would cause the capillary beds to burst.

E) Both C and D would be expected.

2) A human red blood cell in an artery of the left arm is on its way to deliver oxygen to a cell in the thumb. From this point in the artery, how many capillary beds must this red blood cell pass through before it returns to the left ventricle of the heart?

A) one

B) two

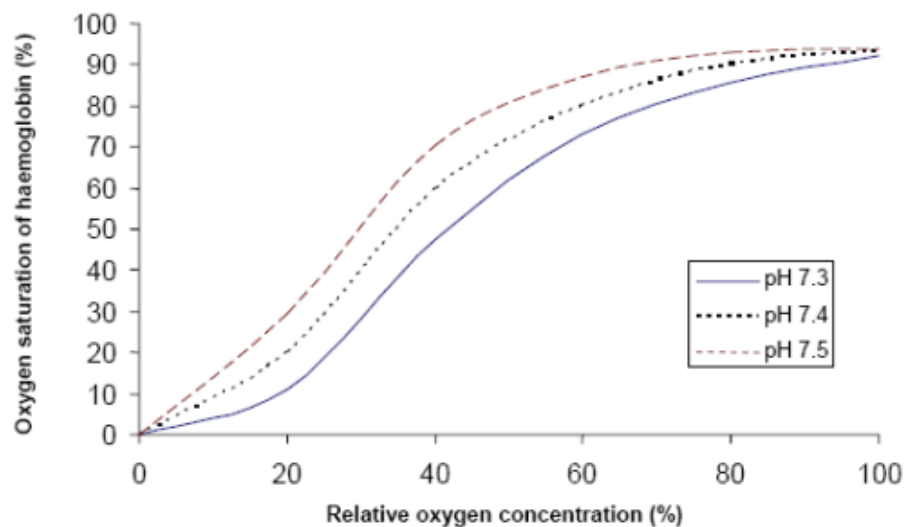
C) three

D) four

E) five

3) In order for an insect to grow as large as an elephant, what changes or modifications would need to be made in the circulatory systems of insects?

- A) The circulating body fluid would need to be contained in closed vessels.
 - B) The heart would need to have multiple chambers.
 - C) The heart would need to have multiple ostia.
 - D) Only A and B are correct.
 - E) A, B, and C are correct.
- 4) What would be the long-term effect if the lymphatic vessels associated with a capillary bed were to become blocked?
- A) More fluid would enter the venous capillaries.
 - B) Blood pressure in the capillary bed would increase.
 - C) Fluid would accumulate in interstitial areas.
 - D) Fewer proteins would leak into the interstitial fluid from the blood.
 - E) Nothing would happen.
- 5) The following graph shows the affinity of hemoglobin for oxygen at three different pH levels.



What effect would vigorous exercise have on hemoglobin in the muscles compared to normal physiological conditions?

- A) Hemoglobin will have the same affinity for oxygen.
- B) Hemoglobin will have a higher affinity for oxygen.
- C) Hemoglobin will have a higher affinity for oxygen only at very low or very high oxygen concentrations.
- D) Hemoglobin will have a lower affinity for oxygen.
- E) Hemoglobin will have a lower affinity for oxygen only at very low or very high oxygen concentrations.