

Solutions

2.1 A Distinguish movement of the whole medium from diffusion across the membrane. Ventilation and perfusion work together, while haemoglobin helps transport oxygen in blood. A change in breathing rate alone does not measure oxygen uptake.

2.2 minute ventilation = $0.60 \text{ L/breath} \times 10 \text{ breaths/min} = 6.0 \text{ L/min}$.

2.3 False. Air entering the lungs is not all exchanged with blood. Oxygen and carbon dioxide diffuse in opposite net directions because their own gradients differ.

2.4 ventilation. ventilation means Movement of air or water over an exchange surface.

3.1 Both minute ventilations 6 L/min . Alveolar values = $(0.50 - 0.15) \times 12 = 4.2$ and $(0.30 - 0.15) \times 20 = 3.0 \text{ L/min}$. This model illustrates the distinction and is not a clinical judgement.