

Solutions

2.1

- The mucosa.

2.2

- Exchange: minimal diffusion distance – one flat cell + basement membrane.

2.3

- Inner circular, outer longitudinal.

3.1

- Artery: thick media, rounder smaller lumen, high wall:lumen.
- Pulse pressure demands elastic/muscular buffering; venous low pressure permits thin walls storing volume.
- Veins – valves against gravity-driven backflow at low pressure.

3.2

- Thickened alveolar walls lengthen the diffusion path: Fick's law – flux falls with distance.
- Early desaturation on exertion (diffusion reserves exhaust first).
- Airway calibre is normal: the lesion is in the wall, not the tube.