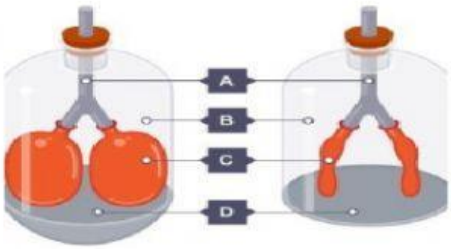
Gr 11 Gas exchange

1. Refer to the model demonstrating the mechanism of breathing below. The correct labels for what the structures A-D respectively, represent are... *

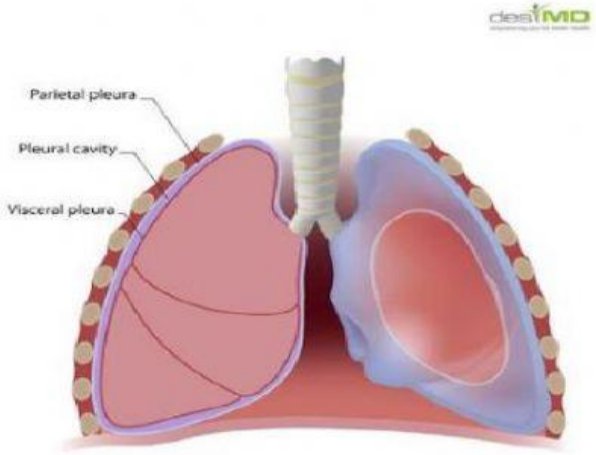


- ◯ Oesophagus; Ribcage; Lung; Stomach
- ◯ Trachea; Thoracic cavity; Lung; Diaphragm
- ◯ Trachea; Ribcage; Lung; Intercostal muscle
- ◯ Larynx; Thoracic cavity; Lung; Diaphragm

2. What requirements make for an efficient gas exchange surface? *

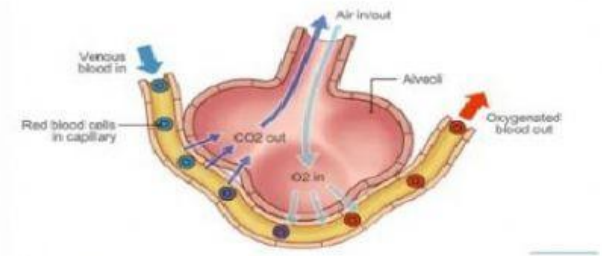
- ◯ It must be thin and moist.
- ◯ It must be well protected and large in relation to body size.
- ◯ It should be enhanced by a transport system.
- ◯ All of the above

3. A thin double membrane, the pleura, lines the inside of the thoracic cavity and the outside of each lung. The diagram below may assist you. What is the function of the pleura and pleural fluid? *



- ◯ To reduce friction during breathing movements.
- ◯ To trap germs and foreign substances.
- ◯ To diffuse oxygen into the blood stream.
- ◯ To provide elasticity.

4. Refer to the diagram below. What process is represented? *

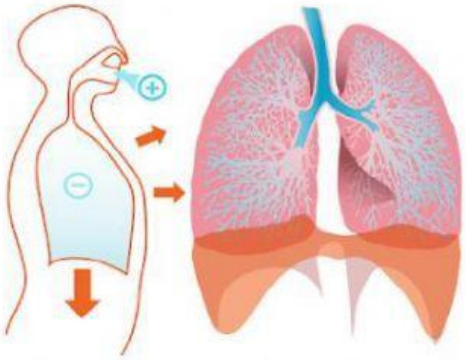


- ◯ Osmosis
- ◯ Filtration
- ◯ Diffusion
- ◯ Breathing

5. Why is 0.03% carbon dioxide inhaled and 4.1% exhaled. *

- ◯ Carbon dioxide is a reactant in the cellular respiration process.
- ◯ Carbon dioxide is a product of cellular respiration and accumulated levels may become toxic to the body.
- ◯ Carbon dioxide is temporarily stored in the lungs.
- ◯ Carbon dioxide is removed during exhalation therefore the reading would be lower.

6. Refer to the images below showing inhalation. Which statement to true regarding this process? *

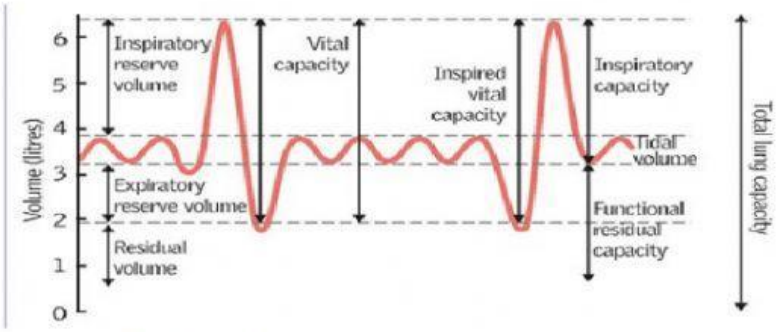


- ◯ Thoracic pressure is lower than atmospheric pressure.
- ◯ The ribcage moves outward and the external intercostal muscles contract
- ◯ The diaphragm relaxes
- ◯ Options 1 and 2
- ◯ All of the above

7. Which part of the brain controls our normal, involuntary, rhythmic breathing rate, in response to changes in the carbon dioxide concentration in the blood? *

- ◯ The medulla oblongata
- ◯ The cerebrum
- ◯ The pituitary gland
- ◯ The cerebellum

8. Refer to the spirometer graph below. The total amount of air that can be moved into and out of the lungs during the deepest inhalation, followed by the deepest exhalation is known as the...

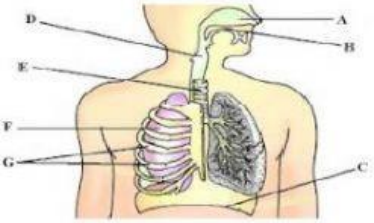


- ◯ inspired vital capacity
- ◯ vital capacity
- ◯ expiratory reserve
- ◯ residual volume

9. Refer to the spirometer graph above in question 8. What is the total lung capacity? *

- ◯ Approximately 4 litres
- ◯ Approximately 2 litres
- ◯ Approximately 6.4 litres
- ◯ Approximately 3.2 litres

10. Refer to the diagram below. The correct labels for the parts of the human respiratory system labelled A, D, F and G respectively, are... *



- ◯ Nasal cavity; pharynx; right lung; ribs
- ◯ Nasal cavity; larynx; right lung; ribs
- ◯ Buccal cavity; pharynx; left lung; ribs
- ◯ Buccal cavity; larynx; right lung; ribs

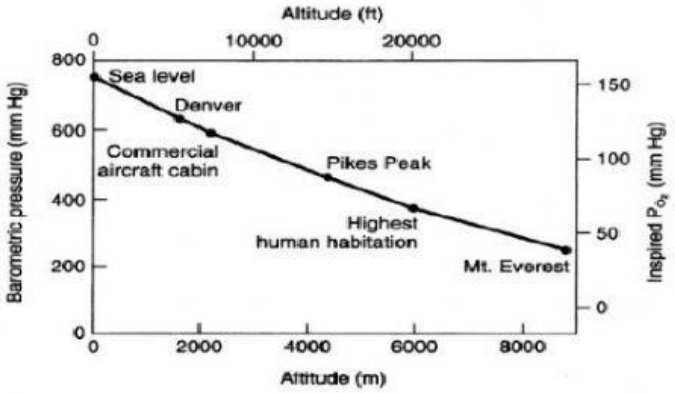
11. Refer to the diagram below. The combination of circulating blood around the body by artificially pumping the heart and blowing air in to the person's lungs through the mouth can provide sufficient oxygen to the vital organs for a limited period of time. What is this called? *

- ◯ Ventilation
- ◯ Artificial respiration
- ◯ Resuscitation
- ◯ Breathing

12. Where does atmospheric air enter the respiratory system? *

- ◯ Bronchi
- ◯ Nasal and Buccal cavities
- ◯ Trachea
- ◯ Nose

13. Refer to the graph below. Which statement would offer a correct conclusion for the data displayed? *



- ◯ Oxygen debt increases with altitude, and pressure increases.
- ◯ Barometric pressure increases with altitude.
- ◯ Oxygen availability in Denver is the same as at Pikes Peak.
- ◯ The higher one is above sea level, the deeper they would need to breath.

14. Which blood vessel enters the lungs from the heart and gives rise to capillaries around the alveoli walls. *

- ◯ Pulmonary artery
- ◯ Pulmonary vein
- ◯ Hepatic Portal vein
- ◯ Aorta

15. Which respiratory disorder includes wheezing, shortness of breath, chest tightness and coughing due to inflammation of airways, mucus production and contraction of the smooth muscles of the airways. *

- ◯ Tuberculosis
- ◯ Asthma
- ◯ Bronchitis
- ◯ Emphysema