Alveoli and gas exchange mechanism

(1) Inhalation :

The diaphragm contracts, and the rib cage expan increasing the volume of the thoracic cavity. This decrease in pressure causes air to rush into the lungs through the trachea and bronchial tubes

(2) Alveolar Gas exchange :

oxygen from the inhaled air difuses across the thi walls of the alveoli into the surrounding capillaries, where it binds to hemoglobin in red blood cells. At the same time, carbon di oxide diffuses from the capillaries into the alveoli to be exhaled.

(3) Transport of Gases :

oxygen rich blood is carried away from the lungs by the pulmonary veins and distnibute

throughout the body. Where it is used for cellular respiration. carbon dioxide, produced as a waste product, is transported back to the lungs by the bloodstream.

(4) Exhalation:

The diaphragm and intercostal muscles relax causing the volume of the thoracic cavity to decrease. This increase in pressure forces air out of the lungs, expelling carbon dioxide and completing the breathing cycle.

(5) Alveolar Maintenance:

surfactant, a substance produced by alveolar cells, helps to reduce surface tension within the alveoli, preventing them for collapsing during exhalation. and maintaining their structure for efficient gas exchange.