1. Breathing is the process of exchange of:
   A. O_2 with CO_2
   B. CO_2 with nitrogen
   C. O_2 with water vapour
   D. CO_2 with glucose (A)

Explanation : Breathing involves taking in oxygen from the atmosphere and releasing carbon dioxide produced by cells.

2. Insects transport atmospheric air through:
   A. Gills B. Lungs
   C. Tracheal tubes D. Moist skin (C)

Explanation : Insects have a network of tracheal tubes for transporting air within the body.

3. The larynx is also called the:
   A. Food pipe
   B. Sound box
   C. Wind pipe
   D. Air sac (B)

Explanation : The larynx helps in sound production, so it is called the sound box.

4. The actual site of gaseous exchange in human lungs is:
   A. Trachea B. Bronchus
   C. Alveoli D. Nasal chamber (B)

Explanation : Alveoli are thin, vascularised structures where actual diffusion of O_2 and CO_2 occurs.

5. Inspiration occurs when intra-pulmonary pressure is:
   A. Higher than atmospheric pressure
   B. Lower than atmospheric pressure
   C. Equal to atmospheric pressure
   D. Independent of pressure (B)

Explanation : Air enters the lungs when pressure inside the lungs becomes lower than atmospheric pressure.

6. Tidal volume in a healthy human is approximately:
   A. 100 mL
   B. 500 mL
   C. 1500 mL
   D. 3000 mL (B)

Explanation : Tidal volume is the air inspired or expired during normal breathing and is about 500 mL.

7. Most oxygen in blood is transported by:
   A. Plasma only
   B. WBCs
   C. RBCs as oxyhaemoglobin
   D. Platelets (C)

Explanation : About 97% of oxygen is transported by RBCs mainly as oxyhaemoglobin.

8. Nearly 70% of carbon dioxide is transported as:
   A. Oxyhaemoglobin
   B. Bicarbonate
   C. Carbamino-haemoglobin
   D. Dissolved oxygen (B)

Explanation : Most CO_2 is transported in blood in the form of bicarbonate ions.

9. The respiratory rhythm centre is located in the:
   A. Cerebrum
   B. Cerebellum
   C. Medulla
   D. Spinal cord (C)

Explanation : The respiratory rhythm centre in the medulla region primarily controls breathing rhythm.

10. Emphysema mainly involves damage to:
    A. Nasal chamber
    B. Alveolar walls
    C. Epiglottis
    D. Pharynx (B)

Explanation : In emphysema, alveolar walls are damaged, reducing the respiratory surface area.