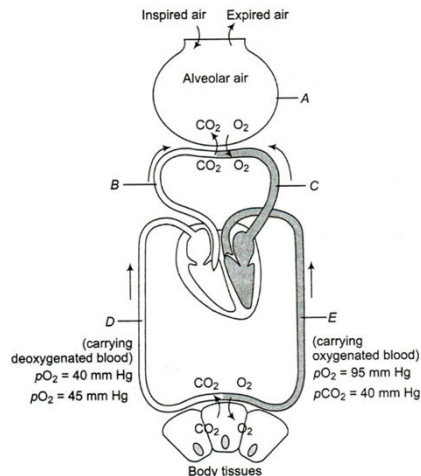


Topic :- Breathing and Exchange of Gases

1. Every 100 mL of deoxygenated blood delivers approximately?
 a) 3 mL of CO_2 b) 2 mL of CO_2 c) 4 mL of CO_2 d) 1 mL of CO_2
2. Which of the following conditions are found in the alveoli of lungs?
 I. high $p \text{ O}_2$ II. Low $p \text{ CO}_2$
 III. high $p \text{ CO}_2$ IV. low $p \text{ O}_2$
 V. low H^+ VI. High H^+
 Choose the correct option
 a) I, III and V b) III, IV and VI c) I, IV and VI d) I, II and V
3. Left shift of oxyhaemoglobin curve is noticed under
 a) Normal temperature and pH b) Low temperature and high pH
 c) Low pH and high temperature d) Low pH and low temperature
4. Humans have to maintain the moderate respiratory rhythms to suit the demands of the body. For fulfilling that purpose, we have the Respiratory rhythm centre in medulla = R
 Pneumotaxic centre in pons = PT
 Chemosensitive area in medulla = C_1
 Peripheral chemoreceptors in aortic arch and carotid artery = C_2
 Select the correct path for the regulation of respiration
- $\text{C}_1 \rightarrow \text{PT} \rightarrow \text{C}_2$ $\text{PT} \rightarrow \text{C}_2 \rightarrow \text{C}_1$ $\text{PT} \rightarrow \text{R} \rightarrow \text{C}_2$
- a) $\begin{matrix} \uparrow \\ \text{R} \end{matrix}$ b) $\begin{matrix} \uparrow \\ \text{R} \end{matrix}$ c) $\begin{matrix} \uparrow \\ \text{C}_1 \end{matrix}$ d) $\text{C}_2 \rightarrow \text{R} \rightarrow \text{PT} \rightarrow \text{C}_1$

5. Identify *A* to *E* in the given diagram and choose the correct option accordingly



- a) A-Alveolus, B-Pulmonary artery, C-Pulmonary vein, D-Systemic vein, E-Systemic arteries
- b) A-Alveolus, B-Pulmonary vein, C-Pulmonary artery, D-Systemic vein, E-Systemic arteries
- c) A-Alveolus, B-Pulmonary vein, C-Pulmonary artery, D-Systemic arteries, E-Systemic vein
- d) A-Alveolus, B-Pulmonary vein, C-Pulmonary artery, D-Systemic arteries, E-Portal vein

6. A chemosensitive area is situated adjacent to the rhythm centre in the brain. This area is highly sensitive to

- a) CO₂ concentration
- b) O₂ concentration
- c) H⁺ concentration
- d) Both (a) and (c)

7. Vocal cords occur in

- a) Pharynx
- b) Larynx
- c) Glottis
- d) Bronchial

8. Total lung capacity is

- a) Total volume of air accommodated in lungs at the end a forced inspiration
- b) RV + ERV + TU + IRV
- c) Vital capacity + residual volume
- d) All of the above

9. In the diagram given in the previous question, the function performed by *A*, *B* and *C* are as follows

A - Diffusion of O₂ to blood

B - Diffusion of CO₂

C - Exchange of gases takes place

Select among *A*, *B* and *C* which one is correctly matched and choose the correct option accordingly

- a) Only A
- b) Only B
- c) Only C
- d) A, B and C

10. Carbonic anhydrase is found in

- a) Blood
- b) Plasma
- c) Both (a) and (b)
- d) None of these

11. Process of exchange of O_2 from the atmosphere with ...A... produced by the cells is called ...B..., which is commonly known as ...C...
Choose the appropriate options for the blanks A, B and C to complete the given NCERT statement
- a) A- H_2O , B-breathing, C-respiration b) A- O_2 , B-breathing, C-respiration
c) A- CO_2 , B-breathing, C-respiration d) A- NO_2 , B-breathing, C-respiration
12. The breathing centre initiates the ventilation in response to
- a) Increase of air pressure b) Decrease of air pressure
c) Increase of CO_2 in arterial blood d) Increase of O_2 in arterial blood
13. Exchange of O_2 and CO_2 between the blood and tissue is based on
- a) Pressure/concentration gradient b) Inspiratory capacity
c) Osmotic gradient d) Tidal volume
14. What are the favourable conditions for oxyhaemoglobin?
- a) High ρO_2 b) Low ρCO_2 c) Low H^+ d) All of these
15. When a sea diver goes very deep he has to breathe on compressed air at high pressure. After sometime, he loses his strength to work and feel drowsy. This is because of
- a) Compressed air b) More carbon dioxide diffusing into molecules
c) More nitrogen diffusing in blood and body fats d) Nervous system does not work properly
16. Which is called Hamburger shift?
- a) Hydrogen shift b) Bicarbonate shift c) Chloride shift d) Sodium shift
17. Hiccups can be best described as
- a) Forceful sudden expiration b) Jerky incomplete inspiration
c) Vibration of the soft palate during breathing d) Sign of indigestion
18. Dead space air in man is
- a) 500 mL b) 150 mL c) 250 mL d) 1.5 mL
19. Human beings have a significant ability to maintain and moderate the respiratory rhythm to suit the demands of the body tissues. This is achieved by
- a) Arterial system b) Systemic vein system
c) Neural system d) Cardiac system
20. The expiratory reserve volume will be
- a) 1000 mL b) 2000 mL c) 4000 mL d) 5000 mL