## **CLASS XI, BIO**

A) PhotosynthesisB) DigestionC) BreathingD) Circulation

## **Set 1: Breathing and Exchange of Gases**

**2.** In human beings, the respiratory passage starts with:

1. The process of exchange of O<sub>2</sub> from atmosphere with CO<sub>2</sub> produced by cells is called:

A) Pharynx B) Nasal chamber C) Trachea D) Larynx
<ul><li>3. The thin elastic flap that prevents entry of food into the larynx during swallowing is:</li><li>A) Epiglottis</li><li>B) Glottis</li><li>C) Vocal cord</li><li>D) Bronchus</li></ul>
<ul> <li>4. The trachea divides into right and left bronchi at the level of:</li> <li>A) 3rd thoracic vertebra</li> <li>B) 4th thoracic vertebra</li> <li>C) 5th thoracic vertebra</li> <li>D) 6th thoracic vertebra</li> </ul>
5. The number of lungs in humans is: A) 1 B) 2 C) 3 D) 4
<ul><li>6. Pleura is:</li><li>A) A muscle of respiration</li><li>B) A double-layered membrane covering lungs</li><li>C) A type of alveolus</li><li>D) A bronchial structure</li></ul>
7. The fluid between pleural membranes is: A) Pericardial fluid B) Cerebrospinal fluid C) Pleural fluid D) Synovial fluid
<ul><li>8. The functional unit for gaseous exchange is:</li><li>A) Bronchiole</li><li>B) Alveolus</li></ul>

<ul> <li>9. The conducting part of respiratory system ends at:</li> <li>A) Alveolar duct</li> <li>B) Terminal bronchioles</li> <li>C) Alveoli</li> <li>D) Secondary bronchi</li> </ul>
<ul><li>10. The dome-shaped muscle aiding breathing is:</li><li>A) Sternum</li><li>B) Diaphragm</li><li>C) Trapezius</li><li>D) Deltoid</li></ul>
11. Inspiration occurs when:  A) Intrapulmonary pressure > Atmospheric pressure  B) Intrapulmonary pressure < Atmospheric pressure  C) Both are equal  D) Chest muscles relax
12. Average breathing rate in a healthy adult is:  A) 6–8 times/min  B) 12–16 times/min  C) 20–25 times/min  D) 30–35 times/min
<ul><li>13. Volume of air inspired or expired during normal respiration is:</li><li>A) Inspiratory reserve volume</li><li>B) Tidal volume</li><li>C) Residual volume</li><li>D) Vital capacity</li></ul>
14. Average tidal volume in humans is about: A) 100 mL B) 500 mL C) 1000 mL D) 3000 mL
<b>15.</b> Inspiratory reserve volume (IRV) in adults averages: A) 1000–1100 mL B) 2500–3000 mL C) 500–600 mL D) 4000–4500 mL

17. Functional residual capacity (FRC) =

**16.** Residual volume (RV) is about:

A) IRV + ERV

A) 1000–1100 mL B) 500–600 mL C) 1100–1200 mL D) 3000–3500 mL

C) Trachea D) Larynx

C)	ERV + RV TV + IRV ERV + TV
A) ( B) ( C)	Total lung capacity (TLC) = TV + IRV + ERV TV + IRV + ERV + RV IRV + ERV + RV TV + ERV + RV
A) B) C)	Exchange of gases occurs by: Osmosis Diffusion Active transport Pinocytosis
A) ( B) ( C)	Partial pressure of oxygen in alveoli is about: 40 mm Hg 95 mm Hg 104 mm Hg 159 mm Hg
A) - B) - C)	Partial pressure of CO₂ in tissues is: 40 mm Hg 45 mm Hg 95 mm Hg 104 mm Hg
A) B) C)	The total thickness of the diffusion membrane is less than: 10 mm 1 mm 0.5 mm 5 mm
A) : B) : C)	Solubility of CO <sub>2</sub> compared to O <sub>2</sub> is: Same 2–3 times higher 10 times higher 20–25 times higher
A) B) C)	About% of O₂ is transported by RBCs. 3% 50% 97% 70%
A) B)	Haemoglobin combines with oxygen to form: Carbaminohaemoglobin Carboxyhaemoglobin Oxyhaemoglobin

D) Deoxyhaemoglobin

<b>26.</b> One molecule of haemoglobin can carry how many molecules of $O_2$ ? A) 2 B) 3 C) 4 D) 6
<ul><li>27. The oxygen dissociation curve is:</li><li>A) Linear</li><li>B) Hyperbolic</li><li>C) Sigmoid</li><li>D) Circular</li></ul>
28. About% of CO₂ is transported as bicarbonates.  A) 7%  B) 20–25%  C) 70%  D) 97%
29. Carbonic anhydrase enzyme is found mainly in:  A) Plasma B) RBCs C) Alveoli D) Bronchioles
30. At tissue site, CO₂ reacts with water to form:  A) Carbonic acid  B) Carbon monoxide  C) Carbonate  D) Carboxylic acid
<ul> <li>31. The enzyme carbonic anhydrase catalyzes conversion between:</li> <li>A) CO<sub>2</sub> and carbonic acid</li> <li>B) O<sub>2</sub> and haemoglobin</li> <li>C) CO<sub>2</sub> and glucose</li> <li>D) O<sub>2</sub> and CO<sub>2</sub></li> </ul>
32. The respiratory rhythm centre is located in:  A) Cerebellum  B) Pons  C) Medulla oblongata  D) Cerebrum
33. Pneumotaxic centre lies in: A) Pons B) Medulla C) Hypothalamus D) Cerebellum
<b>34.</b> The main function of pneumotaxic centre is:  A) Stimulate swallowing

B) Regulate duration of inspiration

C) Regulate heart rate D) Control temperature

## 35. Chemosensitive area detects: A) Oxygen B) Carbon dioxide and H<sup>+</sup> ions C) Nitrogen D) Water vapour

- **36.** Effect of CO<sub>2</sub> on oxygen transport is called:
- A) Haldane effect
- B) Bohr effect
- C) Carbonic effect
- D) Corti effect
- **37.** Asthma is caused due to:
- A) Bacterial infection
- B) Inflammation of bronchi and bronchioles
- C) Lack of O<sub>2</sub>
- D) Lung cancer
- **38.** Emphysema leads to:
- A) Increase in alveolar surface
- B) Damage of alveolar walls
- C) Increased elasticity
- D) Increased RBC count
- 39. Major cause of emphysema is:
- A) Pollution
- B) Cigarette smoking
- C) Viral infection
- D) Cold air
- 40. Occupational respiratory disorder is caused by:
- A) Overeating
- B) Dust inhalation
- C) Viral infection
- D) Low humidity
- 41. Protective measure for occupational lung disorders:
- A) Drinking water
- B) Wearing protective masks
- C) Avoiding sunlight
- D) Taking antibiotics
- 42. The air remaining after normal expiration is called:
- A) Tidal air
- B) Residual air
- C) Functional residual capacity
- D) Expiratory reserve volume
- **43.** Instrument used to measure respiratory volumes:
- A) Thermometer
- B) Spirometer
- C) Barometer
- D) Sphygmomanometer

A) Skin B) Alveoli C) Bronchi D) Trachea
<ul> <li>45. In amphibians like frogs, respiration occurs through:</li> <li>A) Gills only</li> <li>B) Cutaneous surface also</li> <li>C) Lungs only</li> <li>D) Buccal cavity only</li> </ul>
46. Fishes respire through: A) Lungs B) Skin C) Gills D) Trachea
47. The site of gaseous exchange in insects:  A) Skin  B) Tracheal tubes  C) Gills  D) Lungs
<b>48.</b> pO₂ in oxygenated blood is about: A) 40 mm Hg B) 95 mm Hg C) 104 mm Hg D) 159 mm Hg
49. The diffusion membrane consists of how many main layers?  A) 1  B) 2  C) 3  D) 4
<ul><li>50. The role of oxygen in regulating respiration is:</li><li>A) Significant</li><li>B) Insignificant</li><li>C) Major</li><li>D) None</li></ul>

**44.** Respiratory surface in humans:

## Answer Key (Set 1)

1-C, 2-B, 3-A, 4-C, 5-B, 6-B, 7-C, 8-B, 9-B, 10-B, 11-B, 12-B, 13-B, 14-B, 15-B, 16-C, 17-B, 18-B, 19-B, 20-C, 21-B, 22-C, 23-D, 24-C, 25-C, 26-C, 27-C, 28-C, 29-B, 30-A, 31-A, 32-C, 33-A, 34-B, 35-B, 36-B, 37-B, 38-B, 39-B, 40-B, 41-B, 42-C, 43-B, 44-B, 45-B, 46-C, 47-B, 48-B, 49-C, 50-B.