

CHAPTER – 5: Breathing and Exchange of Gases

- 1. What is the primary muscle involved in breathing?**
 - a) Diaphragm**
 - b) Intercostal muscles**
 - c) Abdominal muscles**
 - d) Pectoral muscles**
- 2. What is the process of taking in oxygen and expelling carbon dioxide called?**
 - a) Respiration**
 - b) Digestion**
 - c) Circulation**
 - d) Excretion**
- 3. Where does gas exchange occur in the lungs?**
 - a) Bronchi**
 - b) Alveoli**
 - c) Trachea**
 - d) Bronchioles**
- 4. What is the primary function of the alveoli?**
 - a) Filtering air**
 - b) Producing mucus**
 - c) Gas exchange**
 - d) Warming air**
- 5. Which of the following gases is primarily involved in the regulation of breathing?**
 - a) Nitrogen**
 - b) Oxygen**
 - c) Carbon dioxide**
 - d) Argon**
- 6. What is the term for the volume of air inhaled or exhaled in a normal breath?**
 - a) Tidal volume**
 - b) Vital capacity**
 - c) Residual volume**
 - Inspiratory reserve volume**
- 7. Which part of the brain controls the rate of breathing?**
 - a) Cerebrum**

- b) Medulla oblongata
 - c) Cerebellum
 - d) Thalamus
8. What is the role of hemoglobin in respiration?
- a) Transport oxygen
 - b) Produce carbon dioxide
 - c) Filter air
 - d) Regulate breathing
9. What happens during inspiration?
- a) Diaphragm contracts and moves down
 - b) Intercostal muscles relax
 - c) Chest cavity decreases in volume
 - d) Air is expelled from the lungs
10. What is the volume of air left in the lungs after a maximal exhalation?
- a) Tidal volume
 - b) Residual volume
 - c) Inspiratory reserve volume
 - d) Expiratory reserve volume
11. Which gas is primarily responsible for the feeling of breathlessness?
- a) Oxygen
 - b) Nitrogen
 - c) Carbon dioxide
 - d) Argon
12. What is the primary function of the respiratory system?
- a) Digestion of food
 - b) Regulation of body temperature
 - c) Exchange of gases
 - d) Circulation of blood
13. Where does the exchange of gases between blood and tissues primarily occur?
- a) Alveoli
 - b) Capillaries
 - c) Arteries
 - d) Veins
14. What is the term for the process of exhaling air from the lungs?

- a) Inspiration
 - b) Expiration
 - c) Diffusion
 - d) Perfusion
15. Which structure prevents food from entering the trachea during swallowing?
- a) Uvula
 - b) Epiglottis
 - c) Glottis
 - d) Larynx
16. What is the main component of inhaled air?
- a) Carbon dioxide
 - b) Oxygen
 - c) Nitrogen
 - d) Argon
17. What is the main function of the nasal cavity in respiration?
- a) Filter and warm the air
 - b) Exchange gases
 - c) Produce mucus
 - d) Regulate breathing rate
18. What is the term for the increase in breathing rate in response to increased carbon dioxide levels?
- a) Hyperventilation
 - b) Hypoventilation
 - c) Tachypnea
 - d) Bradypnea
19. Which respiratory volume is the maximum amount of air that can be exhaled after a normal expiration?
- a) Vital capacity
 - b) Inspiratory reserve volume
 - c) Expiratory reserve volume
 - d) Tidal volume
20. What is the primary site for the exchange of gases in the lungs?
- a) Bronchi
 - b) Bronchioles

- c) Alveoli
 - d) Trachea
21. What happens to the diaphragm during expiration?
- a) It contracts
 - b) It relaxes and moves up
 - c) It remains stationary
 - d) It moves down
22. Which of the following statements about oxygen transport is correct?
- a) Oxygen is primarily dissolved in plasma
 - b) Oxygen binds to hemoglobin in red blood cells
 - c) Oxygen is transported as bicarbonate ions
 - d) Oxygen is primarily carried by white blood cells
23. What is the primary role of the respiratory system in maintaining acid-base balance?
- a) Excretion of urea
 - b) Regulation of blood pH through gas exchange
 - c) Production of hormones
 - d) Absorption of nutrients
24. Which condition is characterized by inflammation of the bronchi?
- a) Asthma
 - b) Bronchitis
 - c) Pneumonia
 - d) Emphysema
25. What is the effect of increased carbon dioxide on blood pH?
- a) Increases pH
 - b) Decreases pH
 - c) Has no effect
 - d) Makes blood more alkaline
26. Which type of breathing involves the use of accessory muscles?
- a) Normal breathing
 - b) Diaphragmatic breathing
 - c) Forced breathing
 - d) Abdominal breathing
27. What is the name of the flap-like structure that covers the trachea during swallowing?
- a) Uvula

- b) Epiglottis
 - c) Glottis
 - d) Pharynx
28. Which respiratory condition is commonly known as a “collapsed lung”?
- a) Pneumonia
 - b) Pneumothorax
 - c) Asthma
 - d) Bronchitis
29. Which respiratory volume is the amount of air that can be inhaled after a normal inspiration?
- a) Tidal volume
 - b) Inspiratory reserve volume
 - c) Residual volume
 - d) Expiratory reserve volume
30. What is the primary gas exchanged in the alveoli?
- a) Nitrogen
 - b) Oxygen
 - c) Carbon dioxide
 - d) Argon
31. What is the role of the trachea in the respiratory system?
- a) Exchange of gases
 - b) Transport of air to and from the lungs
 - c) Production of mucus
 - d) Regulation of breathing rate
32. Which gas law describes the relationship between the pressure and volume of a gas?
- a) Boyle's law
 - b) Charles's law
 - c) Dalton's law
 - d) Henry's law
33. What is the primary function of the pleural membranes?
- a) Produce mucus
 - b) Protect the lungs from infections
 - c) Reduce friction between the lungs and chest wall
 - d) Regulate breathing

34. Which of the following is not a part of the respiratory zone?
- a) Alveoli
 - b) Respiratory bronchioles
 - c) Terminal bronchioles
 - d) Trachea
35. What is the term for the process of inhaling and exhaling air?
- a) Respiration
 - b) Ventilation
 - c) Circulation
 - d) Perfusion
36. Which part of the respiratory system filters and humidifies incoming air?
- a) Nasal cavity
 - b) Trachea
 - c) Bronchi
 - d) Alveoli
37. What is the function of surfactant in the lungs?
- a) Protect the alveoli from collapsing
 - b) Increase oxygen absorption
 - c) Decrease carbon dioxide levels
 - d) Regulate breathing rate
38. Which volume of air remains in the lungs even after a maximal exhalation?
- a) Tidal volume
 - b) Inspiratory reserve volume
 - c) Residual volume
 - d) Expiratory reserve volume
39. What is the term for a decrease in the rate of breathing?
- a) Tachypnea
 - b) Bradypnea
 - c) Hyperventilation
 - d) Hypoventilation
40. Which condition is characterized by difficulty in breathing and wheezing due to constriction of airways?
- a) Asthma
 - b) Emphysema

- c) Bronchitis
 - d) Pneumonia
41. Which process is responsible for moving air into and out of the lungs?
- a) Respiration
 - b) Ventilation
 - c) Diffusion
 - d) Circulation
42. What is the primary method of oxygen transport in the blood?
- a) Dissolved in plasma
 - b) Bound to hemoglobin
 - c) As bicarbonate ions
 - d) In white blood cells
43. Which muscle contraction causes an increase in thoracic volume during inspiration?
- a) Diaphragm
 - b) Intercostal muscles
 - c) Abdominal muscles
 - d) Pectoral muscles
44. What is the name of the process by which oxygen and carbon dioxide are exchanged between the blood and tissues?
- a) External respiration
 - b) Internal respiration
 - c) Cellular respiration
 - d) Ventilation
45. What is the primary role of the bronchial tree?
- a) Gas exchange
 - b) Warm and moisten air
 - c) Conduct air to the alveoli
 - d) Produce mucus
46. Which respiratory volume is the amount of air that can be inhaled beyond a normal inspiration?
- a) Tidal volume
 - b) Inspiratory reserve volume
 - c) Expiratory reserve volume
 - d) Residual volume

- 47. What is the main site for the diffusion of gases into the blood?**
- a) Bronchi**
 - b) Alveoli**
 - c) Trachea**
 - d) Bronchioles**
- 48. Which type of breathing is characterized by deep, rapid breaths?**
- a) Hyperventilation**
 - b) Hypoventilation**
 - c) Tachypnea**
 - d) Bradypnea**
- 49. What is the term for a condition where there is a lack of sufficient oxygen in the tissues?**
- a) Hypoxia**
 - b) Hyperoxia**
 - c) Hypercapnia**
 - d) Hypocapnia**
- 50. Which condition is caused by an excessive accumulation of fluid in the lungs?**
- a) Pneumonia**
 - b) Pulmonary edema**
 - c) Asthma**
 - d) Bronchitis**

Answer key

1	2	3	4	5
A	A	B	C	C
6	7	8	9	10
A	B	A	A	B
11	12	13	14	15
C	C	B	B	B
16	17	18	19	20

C	A	A	A	C
21	22	23	24	25
B	B	B	B	B
26	27	28	29	30
C	B	B	B	B
31	32	33	34	35
B	A	C	D	B
36	37	38	39	40
A	A	C	B	A
41	42	43	44	45
B	B	A	B	C
46	47	48	49	50
B	B	A	A	B