

Respiratory System – Practice Questions

Multiple Choice Questions (Choose the correct answer)

1. The main function of the respiratory system is to:
A) Produce hormones
B) Exchange oxygen and carbon dioxide
C) Regulate body temperature
D) Digest food
2. The upper respiratory system includes all of the following EXCEPT:
A) Nose
B) Pharynx
C) Larynx
D) Lungs
3. Pulmonary ventilation refers to:
A) Gas exchange between blood and tissues
B) Movement of air into and out of lungs
C) Transport of oxygen in blood
D) Cellular respiration
4. Air moves into the lungs when:
A) Alveolar pressure is greater than atmospheric pressure
B) Atmospheric pressure equals alveolar pressure
C) Alveolar pressure is less than atmospheric pressure
D) Lung volume decreases
5. Boyle's law explains the relationship between:
A) Temperature and pressure
B) Volume and pressure
C) Volume and density
D) Pressure and diffusion
6. Which muscle is primarily responsible for quiet inhalation?
A) Internal intercostals
B) Abdominal muscles
C) Diaphragm
D) Sternocleidomastoid
7. Normal quiet exhalation is considered:
A) Active
B) Passive
C) Forced
D) Voluntary
8. Surfactant reduces:
A) Lung compliance
B) Airway resistance
C) Surface tension in alveoli
D) Blood pH
9. Low lung compliance means the lungs:
A) Expand easily
B) Resist expansion
C) Have low elasticity
D) Have increased surfactant
10. Airway resistance increases when:
A) Bronchioles dilate
B) Lung volume increases
C) Bronchioles constrict
D) Sympathetic activity increases
11. Tidal volume in a normal adult is approximately:
A) 100 mL

- B) 250 mL
- C) 500 mL
- D) 1000 mL

12. The instrument used to measure lung volumes is called:

- A) Barometer
- B) Spirometer
- C) Manometer
- D) Oximeter

13. Residual volume is the air that:

- A) Can be exhaled forcefully
- B) Remains after maximal exhalation
- C) Is inhaled during deep breathing
- D) Moves during quiet breathing

14. Dalton's law relates to:

- A) Gas solubility
- B) Partial pressures of gases
- C) Gas diffusion rate
- D) Gas temperature

15. Gas exchange in the lungs occurs mainly by:

- A) Active transport
- B) Osmosis
- C) Diffusion
- D) Filtration

16. Most oxygen in blood is transported:

- A) Dissolved in plasma
- B) Bound to hemoglobin
- C) As bicarbonate
- D) As carbaminohemoglobin

17. The Bohr effect describes the effect of:

- A) pH on oxygen binding to hemoglobin
- B) Temperature on lung volume
- C) Pressure on ventilation
- D) CO₂ on surfactant

18. Most carbon dioxide is transported in blood as:

- A) Dissolved CO₂
- B) Carbaminohemoglobin
- C) Bicarbonate ions
- D) Carbonic acid

19. External respiration occurs between:

- A) Blood and tissues
- B) Alveoli and pulmonary capillaries
- C) Cells and mitochondria
- D) Blood and heart

20. The main respiratory control center is located in the:

- A) Cerebrum
- B) Cerebellum
- C) Brain stem
- D) Spinal cord

True / False Questions

1. Inhalation is an active process. (T/F)
2. Exhalation during quiet breathing requires muscle contraction. (T/F)
3. Surfactant deficiency can cause alveolar collapse. (T/F)
4. Oxygen diffuses from areas of low partial pressure to high partial pressure. (T/F)
5. Carbon dioxide is more soluble in blood than oxygen. (T/F)

Answers

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

True / False: 1-T, 2-F, 3-T, 4-F, 5-T