

TEST BANK

Chapter 1

Anatomy and Physiology of the Respiratory and Laryngeal Systems

Multiple Choice Questions

1. Where does the exchange of oxygen and carbon dioxide occur in the respiratory system?
 - a. Larynx
 - b. Alveolar Sacs
 - c. Bronchi
 - d. Pharynx
 - e. Trachea
2. What is the airtight membrane that encases the lungs?
 - a. Epithelium
 - b. Mucous Membrane
 - c. Alveolar Serum
 - d. Saliva
 - e. Visceral Pleura
3. What is a primary muscle of inhalation?
 - a. Diaphragm
 - b. Pectoralis
 - c. Internal Intercostals
 - d. Subclavius
 - e. Internal Oblique
4. During inhalation alveolar pressure is
 - a. Above atmospheric pressure
 - b. Equal to atmospheric pressure
 - c. Below atmospheric pressure
 - d. Not related to atmospheric pressure
 - e. Positive
5. What is the state of the respiratory system when alveolar pressure and atmospheric pressure are equal?
 - a. Inspiratory reserve pressure
 - b. Resting expiratory level
 - c. End-expiratory level
 - d. Expiratory reserve level
 - e. Residual pressure
6. On balance vital capacity is
 - a. 5000 ml
 - b. 500 ml
 - c. 1500 ml
 - d. 2400 ml
 - e. 1000 ml
7. Who first described the cover body model of the vocal folds?

- a. Bernoulli
 - b. Hirano
 - c. Van Den Berg
 - d. Scherer
 - e. Jones
8. What part of the nervous system is generally considered to control respiration?
- a. Midbrain and Medulla
 - b. Cerebellum
 - c. Medulla and Pons
 - d. Cerebral cortex
 - e. Midbrain
9. What function of the larynx facilitates exertion and excretion?
- a. Phonation
 - b. Deglutition
 - c. Fixation
 - d. Respiration
 - e. Articulation
10. What is the largest cartilage of the larynx that is fused anteriorly and opens posteriorly?
- a. Arytenoid
 - b. Cricoid
 - c. Epiglottis
 - d. Corniculate
 - e. Thyroid
11. The closing of the vocal folds.
- a. Adduction
 - b. Phonation
 - c. Abduction
 - d. Resonance
 - e. Articulation
12. The opening of the vocal folds.
- a. Articulation
 - b. Phonation
 - c. Abduction
 - d. Resonance
 - e. Articulation
13. What is immediately deep to the epithelium?
- a. Vocalis muscle
 - b. Lamina Propria
 - c. True folds
 - d. Extracellular matrix
 - e. Vocal process
14. What is the main and deepest muscle of the vocal folds?
- a. Vocalis
 - b. Interarytenoid
 - c. Cricothyroid
 - d. Cricothyroid

- e. Posterior Cricoarytenoid
- 15. What muscle abducts the glottis?
 - a. Vocalis
 - b. Interarytenoid
 - c. Cricothyroid
 - d. Cricoarytenoid
 - e. Posterior Cricoarytenoid
- 16. What muscle regulates longitudinal tension of the vocal folds and produces pitch changes?
 - a. Vocalis
 - b. Interarytenoid
 - c. Cricothyroid
 - d. Cricoarytenoid
 - e. Posterior Cricoarytenoid
- 17. Who identified that as the speed of air flow through the glottis increases the air pressure within the glottis decreases?
 - a. Van Den Berg
 - b. Ferrand
 - c. Jones
 - d. Bernoulli
 - e. Scherer
- 18. What is the minimum phonation threshold pressure for normal conversation speech?
 - a. 3 – 8 cm H₂O
 - b. 1 – 2 cm H₂O
 - c. 8 – 12 cm H₂O
 - d. 12 – 15 cm H₂O
 - e. 20 – 25 cm H₂O
- 19. What is the psychological correlate to fundamental frequency?
 - a. Articulation
 - b. Phonation
 - c. Duration
 - d. Loudness
 - e. Pitch
- 20. What laryngeal muscle elongates the vocal folds and stiffens the cover when contracted?
 - a. Vocalis
 - b. Posterior Cricoarytenoid
 - c. Cricothyroid
 - d. Interarytenoid
 - e. Thyrohyoid
- 21. What is the primary force that increases and decreases loudness?
 - a. Subglottal pressure
 - b. Hydration pressure
 - c. Phonation pressure
 - d. Extrinsic laryngeal muscular pressure
 - e. Fatigue pressure
- 22. Which muscle is considered a suprahyoid?

- a. Cricothyroid
 - b. Thyrohyoid
 - c. Omohyoid
 - d. Sternothyroid
 - e. Mylohyoid
23. What subcortical region appears to be important in coordinating respiration, vocal fold adduction, and laryngeal tension?
- a. Vagus nerve
 - b. Cerebellum
 - c. Periaqueductal Gray
 - d. Pons
 - e. Medulla Oblongata
24. What is the major component of a scar?
- a. Platelets
 - b. Collagen
 - c. Elastin Fibers
 - d. Granulation Tissue
 - e. Myofibroblasts
25. What register is best for conversational speech?
- a. Modal
 - b. Pulse
 - c. Cash
 - d. Falsetto
 - e. Pitch

Matching Questions

- | | |
|---|--|
| _____ 1. Traps particles of dust and bacteria | A. Quiet respiration |
| _____ 2. Controls quiet respiration | B. Average length of female vocal folds |
| _____ 3. 10%: 90% | C. Cricoid cartilage |
| _____ 4. Shield shaped cartilage | D. Mucous membrane |
| _____ 5. 11mm to 15mm | E. Medulla Oblongata |
| _____ 6. Suprahyoid | F. Innervates the internal laryngeal muscles |
| _____ 7. Recurrent Laryngeal Nerve | G. Thyroid cartilage |
| _____ 8. Infrahyoid | H. Stylohyoid |
| _____ 9. 40%:60% | I. Speech respiration |

True/False Questions

1. The digestive and endocrine systems do not influence voice production.
2. The alveolar sacs are a part of the tracheobronchial tree.
3. Exhalation is primarily the result of muscle recoil.
4. In order to inhale the thoracic cavity must contract.
5. During respiration alveolar pressure and atmospheric pressure are inversely related.
6. Lung volumes and capacities are measured in units of milliliters (ml) or liters (l).
7. The time ratio for inhalation and exhalation for speech is 40%:60%.
8. Speech respiration is controlled by the medulla oblongata.
9. Phonation is the sound produced by the vibrating vocal folds.
10. The vallecula is the space between the vocal folds.
11. The ventricular folds are inferior to the true folds.
12. The superficial layer of the lamina Propria is also known as Reinke's space.
13. The inverse of vocal fold stiffness is vocal fold compliance.
14. Bernoulli authored the myoelastic-aerodynamic theory of phonation.
15. Anything that interferes with the mucosal wave can produce a dysphonia.
16. If the sub glottal pressure is doubled, intensity will double as well.
17. The ventricular vocal folds are located superior to the aryepiglottic folds.
18. The neurologic connections for the vagus nerve are located in the nucleus ambiguus.
19. Inflammation is characterized by increased collagen and decreased elastin fibers.
20. Glottal fry is a loudness correlate in the voice.

21. The modal register in males ranges from 75Hz to 450Hz.
22. There are a total of seven laryngeal cartilages.
23. Van Den Berg developed the Aerodynamic-Myoelastic Theory of phonation.
24. The corniculate cartilages are essential to phonation.
25. The laryngeal cough is communicative and phonation is not communicative.

Short Answer Questions

1. List the components of the respiratory system.
2. Describe the five major changes that occur in the patterning of inspiration and expiration when switching from life to speech breathing.
3. Describe the myoelastic-aerodynamic theory of phonation.
4. Describe the essential cortical components of the central nervous system that contributes and controls phonation.
5. Describe the differences between and among modal, pulse, and loft register.