Chapter 1 The Anatomy and Physiology of the Respiratory System

MULTIPLE CHOICE

1. Which of the following are primary components of the upper airway?
   a. nose, oral cavity, pharynx
   b. larynx, trachea, and bronchi
   c. nose, oral cavity, larynx and trachea
   d. nose, oral cavity, pharynx, larynx, and trachea

   ANS: A

	Feedback
A	The nose, oral cavity, and pharynx are the primary structures that compose the upper airway
B	The trachea and bronchi and subglottic portion of the larynx are located in the lower aiway
C	The trachea and subglottic part of the larynx are located in the lower airway.
D	The trachea and subglottic portion of the larynx are located in the lower airway.

   PTS: 1 DIF: Recall REF: The Upper Airway
   OBJ: 1

2. Which of the following is NOT a primary function of the nose?
   a. conduct gas and food to lower airway
   b. humidfy inspired gas
   c. filter the inspired gas
   d. warm the inspired gas

   ANS: A

	Feedback
A	The nose serves as passageway for gas, not food, to the lower airway.
B	The nose humidifies,, warms, and filters the inspired gas.
C	The nose humidifies, warms, and filters the inspired gas.
D	The nose humdifies, warms, and filters the inspired gas.

   PTS: 1 DIF: Recall REF: The Nose OBJ: 3

3. Which of the following are functions of the upper airway?

   I. Conduction of gas to lower airway
   II. Prevent foreign materials from entering lower airway
   III. Warm, filter, and humdify inspired gas
   IV. Aid in speech and smell

   a. I, II, III, and IV
   b. I, II, and III only
   c. I, III, and IV only
   d. I, II, and IV only

   ANS: A

	Feedback
A	The upper airway performs all of the listed functions
B	The upper airway performs all of the listed functions
C	The upper airway performs all of the listed functions
D	The upper airway performs all of the listed functions

   PTS: 1 DIF: Recall REF: The Upper Airway
   OBJ: 2

4. Which structures form the upper third of the nose?

   I. Nasal bones
   II. Frontal process of maxilla
   III. Lateral nasal cartilage
   IV. Greater alar cartilage

   a. I and II only
   b. I , II, and III only
   c. I. II, and IV only
   d. I, II, III, and IV

   ANS: A

	Feedback
A	The upper third of the nose is composed of teh nasal bones and frontal process of the maxilla.
B	The upper third of the nose is composed of teh nasal bones and frontal process of the maxilla.
C	The upper third of the nose is composed of teh nasal bones and frontal process of the maxilla.
D	The upper third of the nose is composed of teh nasal bones and frontal process of the maxilla.

   PTS: 1 DIF: Recall REF: The Nose OBJ: 4

5. Which structure form the lower two-thirds of the nose?

I. Lateral nasal cartilage
II. Lesser and greater alar cartilages
III. Septal cartilage
IV. Fibrous fatty tissue

a. I, II, III, and IV
b. I, II, and III only
c. I, II, and IV only
d. I. III, and IV only

ANS: A

	Feedback
A	All of the listed structures compose the lower two-thirds of the nose
B	All of the listed structures compose the lower two-thirds of the nose
C	All of the listed structures compose the lower two-thirds of the nose
D	All of the listed structures compose the lower two-thirds of the nose

PTS: 1 DIF: Recall REF: The Nose OBJ: 4

6. What is the term for widening of the nostrils that can occur during respiratory distress?

a. nasal flaring
b. alar collapse
c. retractions
d. grunting

ANS: A

	Feedback
A	Nasal flaring is the term for the widening of the nostrils, especially seen in respiratory distress in newborns
B	Nasal flaring is the term for the widening of the nostrils, especially seen in respiratory distress in newborns
C	Nasal flaring is the term for the widening of the nostrils, especially seen in respiratory distress in newborns
D	Nasal flaring is the term for the widening of the nostrils, especially seen in respiratory distress in newborns

PTS: 1 DIF: Recall REF: The Nose|Clinical Connection 1-1: Flaring Nostrils
OBJ: 5

7. Which of the following structures form the anterior nasal septum?

I. Septal cartilage
II. Vomer
III. Perpendicular plate of ethmoid bone
IV. Frontal process of maxilla

a. I only
b. I and II only
c. II, III, and IV only
d. I, II, and III only

ANS: A

	Feedback
A	The anterior portion of the nasal septum if formed by the septal cartilage
B	The anterior portion of the nasal septum if formed by the septal cartilage
C	The anterior portion of the nasal septum if formed by the septal cartilage
D	The anterior portion of the nasal septum if formed by the septal cartilage

PTS: 1 DIF: Recall REF: The Nose OBJ: 6

8. Which structures form the posterior section of the floor of the nasal cavity?

I. Nasal bones
II. Cribriform plate of the ethmoid bone
III. Palatine process of maxilla
IV. Superior portion of soft palate

a. IV only
b. III and IV only
c. II, III, and IV only
d. 1, II, III only

ANS: A

	Feedback
A	The posterior section of the nasal cavity floor is formed by the superior portion of the soft palate
B	The posterior section of the nasal cavity floor is formed by the superior portion of the soft palate
C	The posterior section of the nasal cavity floor is formed by the superior portion of the soft palate
D	The posterior section of the nasal cavity floor is formed by the superior portion of the soft palate

PTS: 1 DIF: Recall REF: The Nose OBJ: 6

9. What is the term for the openings created by the alae nasi and septal cartilage?
   a. nares
   b. glottis
   c. vestibule
   d. choana

   ANS: A

	Feedback
A	The nares or nostrils are the openings formed by the alae nasi and septal cartilage.
B	The nares or nostrils are the openings formed by the alae nasi and septal cartilage.
C	The nares or nostrils are the openings formed by the alae nasi and septal cartilage.
D	The nares or nostrils are the openings formed by the alae nasi and septal cartilage.

   PTS: 1 DIF: Recall REF: The Nose OBJ: 6

10. What type of epithelium lines the anterior third of the nasal cavity?
   a. stratified squamous
   b. pseudostratified ciliated squamous
   c. pseudostratified ciliated columnar
   d. cuboidal

   ANS: A

	Feedback
A	The anterior third of the nasal cavity id lined with stratified squamous epithelium.
B	The anterior third of the nasal cavity id lined with stratified squamous epithelium.
C	The anterior third of the nasal cavity id lined with stratified squamous epithelium.
D	The anterior third of the nasal cavity id lined with stratified squamous epithelium.

   PTS: 1 DIF: Recall REF: The Nose OBJ: 6

11. In which structure would vibrissae normally be found?
   a. nasal cavity
   b. oropharynx
   c. laryngopharynx
   d. trachea

   ANS: A

	Feedback
A	Vibrissae are normally found in the vestibule of the nasal cavity.
B	Vibrissae are normally found in the vestibule of the nasal cavity.
C	Vibrissae are normally found in the vestibule of the nasal cavity.
D	Vibrissae are normally found in the vestibule of the nasal cavity.

   PTS: 1 DIF: Recall REF: The Nose OBJ: 6

12. What type of epithelium is present in the posterior two-thirds of the nasal cavity?
   a. pseudostratified ciliated columnar
   b. cuboidal
   c. stratified squamous
   d. pseudostratified squamous

   ANS: A

	Feedback
A	The posterior two-thirds of the nasal cavity is lined with pseudostratified, ciliated columnar epithelium.
B	The posterior two-thirds of the nasal cavity is lined with pseudostratified, ciliated columnar epithelium.
C	The posterior two-thirds of the nasal cavity is lined with pseudostratified, ciliated columnar epithelium.
D	The posterior two-thirds of the nasal cavity is lined with pseudostratified, ciliated columnar epithelium.

   PTS: 1 DIF: Recall REF: The Nose OBJ: 6

13. What is another term for conchae?
   a. turbinates
   b. choana
   c. vestibule
   d. alae

   ANS: A

	Feedback
A	The conchae in the nasal cavity are also called nasal turninates.
B	The conchae in the nasal cavity are also called nasal turninates.
C	The conchae in the nasal cavity are also called nasal turninates.
D	The conchae in the nasal cavity are also called nasal turninates.

   PTS: 1 DIF: Recall REF: The Nose OBJ: 6

14. Where is the olfactory region located in the nasal cavity?

a. superior and middle turbinates
b. middle and inferior turbinates
c. choana
d. vestibule

ANS: A

	Feedback
A	The olfactory region is located near the superior and middle turbinates.
B	The olfactory region is located near the superior and middle turbinates.
C	The olfactory region is located near the superior and middle turbinates.
D	The olfactory region is located near the superior and middle turbinates.

PTS: 1 DIF: Recall REF: The Nose OBJ: 6

15. Which of the following sinuses are considered to be paranasal sinuses?

I. Maxillary
II. Frontal
III. Ethmoid
IV. Sphenoid

a. I. II. III, and IV
b. I, II, and III only
c. I. III, and IV only
d. I and II only

ANS: A

	Feedback
A	The paranasal sinuses include the maxillary, frontal, ethmoid, and sphenoid sinuses.
B	The paranasal sinuses include the maxillary, frontal, ethmoid, and sphenoid sinuses.
C	The paranasal sinuses include the maxillary, frontal, ethmoid, and sphenoid sinuses.
D	The paranasal sinuses include the maxillary, frontal, ethmoid, and sphenoid sinuses.

PTS: 1 DIF: Recall REF: The Nose OBJ: 6

16. What effect, if any, would be expected from the topical application of phenylephrine on the nasal mucosa?

a. vasoconstriction
b. vasodilation
c. bronchospasm
d. no known effect

ANS: A

	Feedback
A	When phenylephrine is applied to the nasal mucosa, vasoconstriction should occur.
B	When phenylephrine is applied to the nasal mucosa, vasoconstriction should occur.
C	When phenylephrine is applied to the nasal mucosa, vasoconstriction should occur.
D	When phenylephrine is applied to the nasal mucosa, vasoconstriction should occur.

PTS: 1 DIF: Recall
REF: The Nose|Clinical Connection 1-2: The Nose: An Excellent Route for Administration of Topical Agents OBJ: 7

17. Among pediatric patients, in which age range is epistaxis most prevalent?

a. 2-10 years
b. newborn -2 years
c. 8-16 years
d. 10-14 years

ANS: A

	Feedback
A	In pediatric patients, nosebleeds are most prevalent among the 2-10 year olds.
B	In pediatric patients, nosebleeds are most prevalent among the 2-10 year olds.
C	In pediatric patients, nosebleeds are most prevalent among the 2-10 year olds.
D	In pediatric patients, nosebleeds are most prevalent among the 2-10 year olds.

PTS: 1 DIF: Recall
REF: The Nose|Clinical Connection 1-3: Nosebleeds (Epistaxis)
OBJ: 8

18. Approximately what portion of the sense of taste is reliant upon the sense of smell?

a. 80%
b. 60%
c. 40%
d. 20%

ANS: A

	Feedback
A	Approximately 80% of the sense of taste is reliant upon the sense of smell.
B	Approximately 80% of the sense of taste is reliant upon the sense of smell.
C	Approximately 80% of the sense of taste is reliant upon the sense of smell.
D	Approximately 80% of the sense of taste is reliant upon the sense of smell.

PTS: 1 DIF: Recall
REF: The Nose|Clinical Connection 1-4: Nasal Congestion and Its Influence on Taste
OBJ: 9

19. Which of the following can cause sinusitis?

I. Upper respiratory infection
II. Dental infection
III. Air travel
IV. Scuba diving

a. I, II, III, and IV
b. I and II only
c. I, II, and III only
d. I, II, and IV only

ANS: A

	Feedback
A	All of the listed factors can cause sinusitis
B	All of the listed factors can cause sinusitis
C	All of the listed factors can cause sinusitis
D	All of the listed factors can cause sinusitis

PTS: 1 DIF: Recall REF: The Nose|Clinical Connection 1-6: Sinusitis
OBJ: 10

20. In the oral cavity, what is the term for the space between the teeth and lips?
a. vestibule
b. vallecula
c. vibrissae
d. ventricle

ANS: A

	Feedback
A	The space between the teeth and lips is called the vestibule.
B	The space between the teeth and lips is called the vestibule.
C	The space between the teeth and lips is called the vestibule.
D	The space between the teeth and lips is called the vestibule.

PTS: 1 DIF: Recall REF: Oral Cavity OBJ: 11

21. What is the name of the structure that secures the tongue to the floor of the mouth?
a. lingual frenulum
b. extrinsic lingual muscles
c. instrinsic lingual muscles
d. uvula

ANS: A

	Feedback
A	The lingual frenulum secures the tongue to the floor of the mouth.
B	The lingual frenulum secures the tongue to the floor of the mouth.
C	The lingual frenulum secures the tongue to the floor of the mouth.
D	The lingual frenulum secures the tongue to the floor of the mouth.

PTS: 1 DIF: Recall REF: Oral Cavity OBJ: 11

22. Which epithelium lines the oral cavity?
a. stratified squamous
b. cuboidal
c. pseudostraified ciliated columnar
d. pseudostratified squamous

ANS: A

	Feedback
A	The oral cavity is lined with stratified squamous epithelium.
B	The oral cavity is lined with stratified squamous epithelium.
C	The oral cavity is lined with stratified squamous epithelium.
D	The oral cavity is lined with stratified squamous epithelium.

PTS: 1 DIF: Recall REF: Oral Cavity OBJ: 11

23. To what structure is the uvula attached?
a. soft palate
b. hard palate
c. palatopharyngeal arch
d. palatoglossal arch

ANS: A

	Feedback
A	The uvula is attached to the soft palate.
B	The uvula is attached to the soft palate.
C	The uvula is attached to the soft palate.
D	The uvula is attached to the soft palate.

PTS: 1 DIF: Recall REF: Oral Cavity OBJ: 11

24. What is another name for the palatine tonsils?
a. faucial
b. pharyngeal
c. lingual
d. adenoids

ANS: A

	Feedback
A	The palatine tonsils are also called faucial tonsils.
B	The palatine tonsils are also called faucial tonsils.
C	The palatine tonsils are also called faucial tonsils.
D	The palatine tonsils are also called faucial tonsils.

PTS: 1 DIF: Recall REF: Oral Cavity OBJ: 11

25. Which structure extends from the posterior nares to the superior portion of the soft palate?
a. nasopharynx
b. oropharynx
c. tongue
d. palatine tonsils

ANS: A

	Feedback
A	The nasopharynx extends from the posterior portion of the nasal cavity to the superior portion of the soft palate.
B	The nasopharynx extends from the posterior portion of the nasal cavity to the superior portion of the soft palate.
C	The nasopharynx extends from the posterior portion of the nasal cavity to the superior portion of the soft palate.
D	The nasopharynx extends from the posterior portion of the nasal cavity to the superior portion of the soft palate.

PTS: 1 DIF: Recall REF: Nasopharynx
OBJ: 12

26. Which epithelium is present in the nasopharynx?
a. pseudostratified ciliated columnar
b. cuboidal
c. stratified squamous
d. pseudostratified squamous

ANS: A

	Feedback
A	The nasopharynx is lined with pseudostratified ciliated columnar epithelium.
B	The nasopharynx is lined with pseudostratified ciliated columnar epithelium.
C	The nasopharynx is lined with pseudostratified ciliated columnar epithelium.
D	The nasopharynx is lined with pseudostratified ciliated columnar epithelium.

PTS: 1 DIF: Recall REF: Nasopharynx
OBJ: 12

27. What is another name for pharyngeal tonsils?
a. adenoids
b. palatine tonsils
c. lingual tonsils
d. faucial tonsils

ANS: A

	Feedback
A	The pharyngeal tonsils are also called adenoids.
B	The pharyngeal tonsils are also called adenoids.
C	The pharyngeal tonsils are also called adenoids.
D	The pharyngeal tonsils are also called adenoids.

PTS: 1 DIF: Recall
REF: Nasopharynx|Clinical Connection 1-7: Infected and Swollen Pharyngeal Tonsils (Adenoids)
OBJ: 13

28. What is another name for the pharyngotympanic tubes?
a. auditory
b. adenoids
c. faucial
d. conchae

ANS: A

	Feedback
A	The pharyngotympanic tubes are also called auditory tubes.
B	The pharyngotympanic tubes are also called auditory tubes.
C	The pharyngotympanic tubes are also called auditory tubes.
D	The pharyngotympanic tubes are also called auditory tubes.

PTS: 1 DIF: Recall REF: Nasopharynx
OBJ: 12

29. What is the most frequent cause of hearing loss in young children?
a. otitis media
b. sinusitis
c. tonsillitis
d. pharyngitis

ANS: A

	Feedback
A	Otitis media is the most frequent cause of hearing loss in young children.
B	Otitis media is the most frequent cause of hearing loss in young children.
C	Otitis media is the most frequent cause of hearing loss in young children.
D	Otitis media is the most frequent cause of hearing loss in young children.

PTS: 1 DIF: Recall
REF: Nasopharynx|Clinical Connection 1-8: Otitis Media OBJ: 14

30. Which structure extends from the soft palate to the base of the tongue?
a. oropharynx
b. nasopharynx
c. laryngopharynx
d. uvula

ANS: A

	Feedback
A	The oropharynx extends from the soft palate to the base of the tongue.
B	The oropharynx extends from the soft palate to the base of the tongue.
C	The oropharynx extends from the soft palate to the base of the tongue.
D	The oropharynx extends from the soft palate to the base of the tongue.

PTS: 1 DIF: Recall REF: Oropharynx OBJ: 12

31. What type of epithelium is found in the oropharynx?
a. stratified squamous
b. pseudostratified squamous
c. pseudostratified ciliated columnar
d. cuboidal

ANS: A

	Feedback
A	The oropharynx is lined with stratified squamous epithelium.
B	The oropharynx is lined with stratified squamous epithelium.
C	The oropharynx is lined with stratified squamous epithelium.
D	The oropharynx is lined with stratified squamous epithelium.

PTS: 1 DIF: Recall REF: Oropharynx OBJ: 12

32. What structure is located between the glossoepiglottic folds in the posterior oropharynx?
a. vallecula epiglottica
b. lingual tonsils
c. palatine tonsils
d. rima glottidis

ANS: A

	Feedback
A	The vallecula epiglottica is located between the glossoepiglottic folds in the posterior oropharynx.
B	The vallecula epiglottica is located between the glossoepiglottic folds in the posterior oropharynx.
C	The vallecula epiglottica is located between the glossoepiglottic folds in the posterior oropharynx.
D	The vallecula epiglottica is located between the glossoepiglottic folds in the posterior oropharynx.

PTS: 1 DIF: Recall REF: Oropharynx OBJ: 12

33. Which type of epithelium lines the laryngopharynx?
a. stratified squamous
b. pseudostratified squamous
c. pseudostratified ciliated columnar
d. cuboidal

ANS: A

	Feedback
A	The laryngopharynx is lined with stratified squamous epithelium.
B	The laryngopharynx is lined with stratified squamous epithelium.
C	The laryngopharynx is lined with stratified squamous epithelium.
D	The laryngopharynx is lined with stratified squamous epithelium.

PTS: 1 DIF: Recall REF: Laryngopharynx
OBJ: 12

34. What is a common site for misplacement of endotracheal tubes during emergency intubation?
a. esophagus
b. left mainstem bronchus
c. stomach
d. left upper lobar bronchus

ANS: A

	Feedback
A	During emergency intubation, the endotracheal tube could be misplaced into the esophagus
B	During emergency intubation, the endotracheal tube could be misplaced into the esophagus
C	During emergency intubation, the endotracheal tube could be misplaced into the esophagus
D	During emergency intubation, the endotracheal tube could be misplaced into the esophagus

PTS: 1 DIF: Recall
REF: Laryngopharynx|Clinical Connection 1-9: Endotracheal Tube
OBJ: 15

35. Which structure extends from the base of the tongue to the upper end of the trachea?
a. larynx
b. laryngopharynx
c. thyroid gland
d. rima glottidis

ANS: A

	Feedback
A	The larynx extends from the base of the tongue to the trachea.
B	The larynx extends from the base of the tongue to the trachea.
C	The larynx extends from the base of the tongue to the trachea.
D	The larynx extends from the base of the tongue to the trachea.

PTS: 1 DIF: Recall REF: The Larynx OBJ: 17

36. Which of the following are functions of the larynx?

I. Passageway for gas
II. Protects against aspiration
III. Generation of sounds for speech
IV. Warming and filtration of inspired gas

a. I, II, and III only
b. I and II only
c. I and III only
d. I, III, and IV only

ANS: A

	Feedback
A	The larynx conducts gas between the phaynx and trachea, protects against aspiration, and generates sound for speech.
B	The larynx conducts gas between the phaynx and trachea, protects against aspiration, and generates sound for speech.
C	The larynx conducts gas between the phaynx and trachea, protects against aspiration, and generates sound for speech.
D	The larynx conducts gas between the phaynx and trachea, protects against aspiration, and generates sound for speech.

PTS: 1 DIF: Recall REF: The Larynx OBJ: 21

37. Which of the cartilages of the larynx are unpaired?
a. thyroid, epiglottis, and cricoid
b. thyroid, cricoid, and cuneiform
c. artyenoid, cuneiform, and corniculate
d. thyroid, epiglottis, and arytenoid

ANS: A

	Feedback
A	The unpaired laryngeal cartilages are the epiglottis, thyroid, and cricoid cartilages.
B	The unpaired laryngeal cartilages are the epiglottis, thyroid, and cricoid cartilages.
C	The unpaired laryngeal cartilages are the epiglottis, thyroid, and cricoid cartilages.
D	The unpaired laryngeal cartilages are the epiglottis, thyroid, and cricoid cartilages.

PTS: 1 DIF: Recall REF: Cartilages of the Larynx
OBJ: 16

38. To what structure does the upper portion of the thyroid cartilage attach by a membrane?

a. hyoid bone
b. tongue
c. epiglottis
d. mandible

ANS: A

	Feedback
A	The upper portion of the thyroid cartilage attaches by a membrane to the hyoid bone.
B	The upper portion of the thyroid cartilage attaches by a membrane to the hyoid bone.
C	The upper portion of the thyroid cartilage attaches by a membrane to the hyoid bone.
D	The upper portion of the thyroid cartilage attaches by a membrane to the hyoid bone.

PTS: 1 DIF: Recall REF: Cartilages of the Larynx
OBJ: 16

39. Which laryngeal cartilage is primarily responsible for preventing food, liquids, and foreign bodies from entering the lower airways?

a. epiglottis
b. thyroid
c. cricoid
d. corniculate

ANS: A

	Feedback
A	The epiglottis normally protects the lower airway from aspiration.
B	The epiglottis normally protects the lower airway from aspiration.
C	The epiglottis normally protects the lower airway from aspiration.
D	The epiglottis normally protects the lower airway from aspiration.

PTS: 1 DIF: Recall REF: Cartilages of the Larynx
OBJ: 16

40. Which laryngeal cartilage is shaped like a signet ring and forms a large portion of the posterior laryngeal wall?

a. cricoid
b. cuneiform
c. corniculate
d. epiglottis

ANS: A

	Feedback
A	The cricoid cartilage is shaped like a signet ring and forms most of the posterior laryngeal wall.
B	The cricoid cartilage is shaped like a signet ring and forms most of the posterior laryngeal wall.
C	The cricoid cartilage is shaped like a signet ring and forms most of the posterior laryngeal wall.
D	The cricoid cartilage is shaped like a signet ring and forms most of the posterior laryngeal wall.

PTS: 1 DIF: Recall REF: Cartilages of the Larynx
OBJ: 16

41. Which of the laryngeal cartilages are paired?

I. Cuneiform
II. Arytenoid
III. Corniculate
IV. Cricoid

a. I, II, and III only
b. I, II, III, and IV
c. I, II, and IV only
d. II, III, and IV only

ANS: A

	Feedback
A	The paired laryngeal cartilages include the cuneiform, arytenoid, and corniculate cartilages.
B	The paired laryngeal cartilages include the cuneiform, arytenoid, and corniculate cartilages.
C	The paired laryngeal cartilages include the cuneiform, arytenoid, and corniculate cartilages.
D	The paired laryngeal cartilages include the cuneiform, arytenoid, and corniculate cartilages.

PTS: 1 DIF: Recall REF: Cartilages of the Larynx
OBJ: 16

42. What is the space between the true vocal cords called?
a. rima glottidis
b. vestibule
c. vallecula
d. choana

ANS: A

	Feedback
A	The space between the vocal cords is called the rima glottidis or glottis.
B	The space between the vocal cords is called the rima glottidis or glottis.
C	The space between the vocal cords is called the rima glottidis or glottis.
D	The space between the vocal cords is called the rima glottidis or glottis.

PTS: 1 DIF: Recall REF: Interior of the Larynx
OBJ: 17

43. What is the treatment of choice for post-extubation laryngeal edema?
a. aerosolized alpha adrenergic agent such as racemic epinephrine
b. antibiotics
c. cough medicine
d. long-acting bronchodilators

ANS: A

	Feedback
A	The administration of aerosolized alpha adrenergic agents is the treatment of choice for post extubation laryngeal edema.
B	The administration of aerosolized alpha adrenergic agents is the treatment of choice for post extubation laryngeal edema.
C	The administration of aerosolized alpha adrenergic agents is the treatment of choice for post extubation laryngeal edema.
D	The administration of aerosolized alpha adrenergic agents is the treatment of choice for post extubation laryngeal edema.

PTS: 1 DIF: Recall
REF: Interior of the Larynx|Clinical Connection 1-10: Laryngitis
OBJ: 18

44. Which of the following is a subglottic airway obstruction usually caused by the parainfluenza virus?
a. laryngotracheobronchitis (LTB)
b. epiglottitis
c. tonsillitis
d. pharyngitis

ANS: A

	Feedback
A	LTB is a subglottic airway obstruction usually caused by a parainfluenza virus.
B	LTB is a subglottic airway obstruction usually caused by a parainfluenza virus.
C	LTB is a subglottic airway obstruction usually caused by a parainfluenza virus.
D	LTB is a subglottic airway obstruction usually caused by a parainfluenza virus.

PTS: 1 DIF: Recall
REF: Interior of the Larynx|Clinical Connection 1-11: Croup Syndrome
OBJ: 19

45. What is causative agent in the majority of cases of acute epiglottitis?
a. Haemophilus influenzae type B
b. Parainfluenza virus
c. MRSA
d. Streptococcus

ANS: A

	Feedback
A	The majority of acute epiglotittis cases is caused by Haemophilus inflenzae type B.
B	The majority of acute epiglotittis cases is caused by Haemophilus inflenzae type B.
C	The majority of acute epiglotittis cases is caused by Haemophilus inflenzae type B.
D	The majority of acute epiglotittis cases is caused by Haemophilus inflenzae type B.

PTS: 1 DIF: Recall
REF: Interior of the Larynx|Clinical Connection 1-11: Croup Syndrome
OBJ: 19

46. Which type of epithelium is present in the larynx above the vocal cords?
a. stratified squamous
b. cuboidal
c. pseudostratified squamous
d. pseudostratified ciliated columnar

ANS: A

	Feedback
A	Above the cords, the larynx is lined with stratified squamous epithelium.
B	Above the cords, the larynx is lined with stratified squamous epithelium.
C	Above the cords, the larynx is lined with stratified squamous epithelium.
D	Above the cords, the larynx is lined with stratified squamous epithelium.

PTS: 1 DIF: Recall REF: Interior of the Larynx
OBJ: 17

47. Which laryngeal muscles are primarily responsible for adduction of the vocal cords?
a. lateral cricoarytenoid
b. posterior cricoarytenoid
c. transverse arytenoid
d. thyroarytenoid

ANS: A

	Feedback
A	The lateral cricoarytenoid muscles cause the vocal cords to move together.
B	The lateral cricoarytenoid muscles cause the vocal cords to move together.
C	The lateral cricoarytenoid muscles cause the vocal cords to move together.
D	The lateral cricoarytenoid muscles cause the vocal cords to move together.

PTS: 1 DIF: Recall REF: Laryngeal Musculature
OBJ: 20

48. Which of the following muscles pull the larynx and hyoid downward?
a. infrahyoid group
b. suprahyoid group
c. cricothyroid muscles
d. posterior cricoarytenoid muscles

ANS: A

	Feedback
A	The infrahyoid muscle group pull the larynx and hyoid downward.
B	The infrahyoid muscle group pull the larynx and hyoid downward.
C	The infrahyoid muscle group pull the larynx and hyoid downward.
D	The infrahyoid muscle group pull the larynx and hyoid downward.

PTS: 1 DIF: Recall REF: Laryngeal Musculature
OBJ: 20

49. What is the secondary vital function of the larynx?
a. Valsalva's maneuver
b. Gag reflex
c. Babinski reflex
d. Moro maneuver

ANS: A

	Feedback
A	Effort closure during exhalation (Valsalva's maneuver) is an important secondary function of the larynx.
B	Effort closure during exhalation (Valsalva's maneuver) is an important secondary function of the larynx.
C	Effort closure during exhalation (Valsalva's maneuver) is an important secondary function of the larynx.
D	Effort closure during exhalation (Valsalva's maneuver) is an important secondary function of the larynx.

PTS: 1 DIF: Recall REF: Ventilatory Function of the Larynx
OBJ: 21

50. What type of epithelium extends from the trachea to the respiratory bronchioles?
a. pseudostratified ciliates columnar
b. cuboidal
c. pseudostratified squamous
d. stratified squamous

ANS: A

	Feedback
A	Pseudostratified ciliated columnar epithelium extends from the trachea to the respiratory bronchioles.
B	Pseudostratified ciliated columnar epithelium extends from the trachea to the respiratory bronchioles.
C	Pseudostratified ciliated columnar epithelium extends from the trachea to the respiratory bronchioles.
D	Pseudostratified ciliated columnar epithelium extends from the trachea to the respiratory bronchioles.

PTS: 1 DIF: Recall REF: Histology of the Tracheobronchial Tree
OBJ: 22

51. What is the primary component of the mucous blanket in the tracheobronchial tree?
a. water
b. lipids
c. glycoproteins
d. DNA

ANS: A

	Feedback
A	The mucous blanket is approximately ninety-five percent water.
B	The mucous blanket is approximately ninety-five percent water.
C	The mucous blanket is approximately ninety-five percent water.
D	The mucous blanket is approximately ninety-five percent water.

PTS: 1 DIF: Recall REF: Histology of the Tracheobronchial Tree
OBJ: 22

52. At what level in the tracheobronchial tree are cilia completely absent?
a. respiratory bronchioles
b. lobar bronchi
c. mainstem bronchi
d. bronchioles

ANS: A

	Feedback
A	Cilia are absent from the epithelial cells of the respiratory bronchioles.
B	Cilia are absent from the epithelial cells of the respiratory bronchioles.
C	Cilia are absent from the epithelial cells of the respiratory bronchioles.
D	Cilia are absent from the epithelial cells of the respiratory bronchioles.

PTS: 1 DIF: Recall REF: Histology of the Tracheobronchial Tree
OBJ: 22

53. Which cranial nerve innervates the submucosal glands?
a. tenth
b. ninth
c. eighth
d. seventh

ANS: A

	Feedback
A	The tenth cranial nerve (vagus) innervates the submucosal glands.
B	The tenth cranial nerve (vagus) innervates the submucosal glands.
C	The tenth cranial nerve (vagus) innervates the submucosal glands.
D	The tenth cranial nerve (vagus) innervates the submucosal glands.

PTS: 1 DIF: Recall REF: Histology of the Tracheobronchial Tree
OBJ: 22

54. What is the term for the viscous layer of the mucous blanket?
a. gel
b. sol
c. basal
d. epoxic

ANS: A

	Feedback
A	The thicker layer of the mucous blanket is called the gel layer.
B	The thicker layer of the mucous blanket is called the gel layer.
C	The thicker layer of the mucous blanket is called the gel layer.
D	The thicker layer of the mucous blanket is called the gel layer.

PTS: 1 DIF: Recall REF: Histology of the Tracheobronchial Tree
OBJ: 22

55. How many times per minute do the cilia in the tracheobronchial tree move?
a. 1500 times
b. 2500 times
c. 500 times
d. 50 times

ANS: A

	Feedback
A	The cilia in the tracheobronchial tree move approximately 1500 times per minute.
B	The cilia in the tracheobronchial tree move approximately 1500 times per minute.
C	The cilia in the tracheobronchial tree move approximately 1500 times per minute.
D	The cilia in the tracheobronchial tree move approximately 1500 times per minute.

PTS: 1 DIF: Recall REF: Histology of the Tracheobronchial Tree
OBJ: 22

56. When excessive secretions are present in the lungs, what term describes the sound heard by ascultation over large airways during exhalation?
a. rhonchi
b. wheeze
c. crackles
d. stridor

ANS: A

	Feedback
A	Rhonchi are heard over large airways during exhalation when secretions are present
B	Rhonchi are heard over large airways during exhalation when secretions are present
C	Rhonchi are heard over large airways during exhalation when secretions are present
D	Rhonchi are heard over large airways during exhalation when secretions are present

PTS: 1 DIF: Recall
REF: Histology of the Tracheobronchial Tree |Clinical Connection 1-12: Excessive Airway Secretions OBJ: 23

57. Which of the following factors can alter the mucociliary transport mechanism?

I. Excessive bronchial secretions
II. Tobacco smoke
III. Hypoxia
IV. Air pollution

a. I, II, III, and IV
b. I, II, and IV only
c. I, II, and III only
d. I and II only

ANS: A

	Feedback
A	All of the listed factors can alter the mucociliary transport mechanism.
B	All of the listed factors can alter the mucociliary transport mechanism.
C	All of the listed factors can alter the mucociliary transport mechanism.
D	All of the listed factors can alter the mucociliary transport mechanism.

PTS: 1 DIF: Recall
REF: Histology of the Tracheobronchial Tree |Clinical Connection 1-13: Abnormal Mucociliary Transport Mechanism
OBJ: 24

58. Where are mast cells located in the tracheobronchial tree?

I. Lamina propria
II. Intra-alveolar septa
III. Sub-mucosal glands

a. I, II, and III
b. I only
c. I and III only
d. I and II only

ANS: A

	Feedback
A	Mast cells are scattered throughout the lamina propria, intralveolar septa, and submucosal glands.
B	Mast cells are scattered throughout the lamina propria, intralveolar septa, and submucosal glands.
C	Mast cells are scattered throughout the lamina propria, intralveolar septa, and submucosal glands.
D	Mast cells are scattered throughout the lamina propria, intralveolar septa, and submucosal glands.

PTS: 1 DIF: Recall REF: Immune Response
OBJ: 22

59. Approximately how many IgE receptor sites are present on a single mast cell?

a. 100,000 - 500,000
b. 1,000 - 5,000
c. 100 - 500
d. 1,000,000 - 5,000,000

ANS: A

	Feedback
A	There are approximately 100,000 - 500,000 IgE receptor sites on the surface of each mast cell.
B	There are approximately 100,000 - 500,000 IgE receptor sites on the surface of each mast cell.
C	There are approximately 100,000 - 500,000 IgE receptor sites on the surface of each mast cell.
D	There are approximately 100,000 - 500,000 IgE receptor sites on the surface of each mast cell.

PTS: 1 DIF: Recall REF: Immune Response
OBJ: 22

60. When degranulation of mast cells occurs and chemical mediators are released, which of the following would occur in the lungs?

I. Increased vascular permeability
II. Increased mucus production
III. Smooth muscle relaxation
IV. Vasodilation with edema

a. I, II, and IV only
b. I, II, III and IV
c. I, II, and III only
d. I and IV only

ANS: A

	Feedback
A	Of the listed changes, only increased vascular permeability, increased mucus production, and vasodilation with edema would occur when mast cells degranulate.
B	Of the listed changes, only increased vascular permeability, increased mucus production, and vasodilation with edema would occur when mast cells degranulate.
C	Of the listed changes, only increased vascular permeability, increased mucus production, and vasodilation with edema would occur when mast cells degranulate.
D	Of the listed changes, only increased vascular permeability, increased mucus production, and vasodilation with edema would occur when mast cells degranulate.

PTS: 1 DIF: Recall REF: Immune Response
OBJ: 22

61. What is the term for the cartilaginous airways?

a. conducting zone
b. respiratory unit
c. acinus
d. tracheobronchial tree

ANS: A

	Feedback
A	The cartilaginous airways are collectively known as the conducting zone.
B	The cartilaginous airways are collectively known as the conducting zone.
C	The cartilaginous airways are collectively known as the conducting zone.
D	The cartilaginous airways are collectively known as the conducting zone.

PTS: 1 DIF: Recall REF: The Cartilaginous Airways
OBJ: 25

62. In cm, what is the average diameter of the adult trachea?

a. 1.5 - 2.5 cm
b. 2.0-3.5 cm
c. 0.75 - 1.0 cm
d. 0.5 - 1.5 cm

ANS: A

	Feedback
A	The diameter of an adult trachea is between 1.5 and 2.5 cm.
B	The diameter of an adult trachea is between 1.5 and 2.5 cm.
C	The diameter of an adult trachea is between 1.5 and 2.5 cm.
D	The diameter of an adult trachea is between 1.5 and 2.5 cm.

PTS: 1 DIF: Recall REF: The Cartilaginous Airways
OBJ: 25

63. What is the term for the bifurcation of the trachea?

a. carina
b. hilum
c. choana
d. concha

ANS: A

	Feedback
A	The carina is the point of bifurcation of the trachea.
B	The carina is the point of bifurcation of the trachea.
C	The carina is the point of bifurcation of the trachea.
D	The carina is the point of bifurcation of the trachea.

PTS: 1 DIF: Recall REF: The Cartilaginous Airways
OBJ: 25

64. In an adult, at what angle does the left mainstem bronchus branch from the trachea?
a. 40-60 degrees
b. 60-75 degrees
c. 25-40 degrees
d. 10-15 degrees

ANS: A

	Feedback
A	In the adult, the left mainstem bronchus branches from the trachea at an angle between 40 and 60 degrees.
B	In the adult, the left mainstem bronchus branches from the trachea at an angle between 40 and 60 degrees.
C	In the adult, the left mainstem bronchus branches from the trachea at an angle between 40 and 60 degrees.
D	In the adult, the left mainstem bronchus branches from the trachea at an angle between 40 and 60 degrees.

PTS: 1 DIF: Recall REF: The Cartilaginous Airways
OBJ: 25

65. What is the recommended “safe range” for endotracheal tube cuff pressures?
a. 20-25 mm Hg
b. 30-35 mm Hg
c. 35-40 mm Hg
d. 45-50 mm Hg

ANS: A

	Feedback
A	The recommended safe range for cuff pressure is 20-25 mm Hg.
B	The recommended safe range for cuff pressure is 20-25 mm Hg.
C	The recommended safe range for cuff pressure is 20-25 mm Hg.
D	The recommended safe range for cuff pressure is 20-25 mm Hg.

PTS: 1 DIF: Recall
REF: The Cartilaginous Airways|Clinical Connection 1-14: Hazards Associated with Endotracheal Tubes and Tracheostomies
OBJ: 26

66. Which vessel is the most commonly associated with massive hemorrhage following a tracheostomy?
a. innominate artery
b. carotid artery
c. pulmonary artery
d. subclavian artery

ANS: A

	Feedback
A	The innominate artery is most commonly associated with massive hemmorhage following a tracheostomy.
B	The innominate artery is most commonly associated with massive hemmorhage following a tracheostomy.
C	The innominate artery is most commonly associated with massive hemmorhage following a tracheostomy.
D	The innominate artery is most commonly associated with massive hemmorhage following a tracheostomy.

PTS: 1 DIF: Recall
REF: The Cartilaginous Airways|Clinical Connection 1-14: Hazards Associated with Endotracheal Tubes and Tracheostomies
OBJ: 26

67. In the newborn, at what angles do the right and left mainstem bronchi form with the trachea?
a. both form a 55 degree angle
b. both form a 40 degree angle
c. right forms a 25 degree angle, left forms a 60 degree angle
d. right forms a 60 degree angle, left forms a 25 degree angle

ANS: A

	Feedback
A	In the newborn, both mainstem bronchi form a 55 degree angle with the trachea.
B	In the newborn, both mainstem bronchi form a 55 degree angle with the trachea.
C	In the newborn, both mainstem bronchi form a 55 degree angle with the trachea.
D	In the newborn, both mainstem bronchi form a 55 degree angle with the trachea.

PTS: 1 DIF: Recall REF: The Cartilaginous Airways
OBJ: 25

68. In an adult, into which structure would an endotracheal tube likely enter if the tube is inadvertently advanced too far?
a. right mainstem bronchus
b. left mainstem bronchus
c. right middle lobar bronchus
d. left lower lobar bronchus

ANS: A

	Feedback
A	An ET tube is likely to enter the right mainstem bronchus if advanced too far in an adult.
B	An ET tube is likely to enter the right mainstem bronchus if advanced too far in an adult.
C	An ET tube is likely to enter the right mainstem bronchus if advanced too far in an adult.
D	An ET tube is likely to enter the right mainstem bronchus if advanced too far in an adult.

PTS: 1 DIF: Application
REF: The Cartilaginous Airways|Clinical Connection 1-15: Inadvertent Intubation of Right Mainstem Bronchus OBJ: 27

69. How many second generation bronchi would you find in a healthy adult tracheobronchial tree?
a. 5
b. 3
c. 6
d. 2

ANS: A

	Feedback
A	There are 5 lobar or second generation bronchi in the tracheobronchial tree.
B	There are 5 lobar or second generation bronchi in the tracheobronchial tree.
C	There are 5 lobar or second generation bronchi in the tracheobronchial tree.
D	There are 5 lobar or second generation bronchi in the tracheobronchial tree.

PTS: 1 DIF: Recall REF: The Cartilaginous Airways
OBJ: 25

70. How many segmental bronchi are found in each of the lungs?
a. 10 in right lung, 8 in left lung
b. 8 in right lung, 10 in left lung
c. each lung has 8
d. each lung has 10

ANS: A

	Feedback
A	There are 10 segmental bronchi in the right lung and 8 in the left lung.
B	There are 10 segmental bronchi in the right lung and 8 in the left lung.
C	There are 10 segmental bronchi in the right lung and 8 in the left lung.
D	There are 10 segmental bronchi in the right lung and 8 in the left lung.

PTS: 1 DIF: Recall REF: The Cartilaginous Airways
OBJ: 25

71. Which airways compose the noncartilaginous airways?

I. Subsegmental bronchi
II. Bronchioles
III. Terminal bronchioles
IV. Respiratory bronchioles

a. II and III only
b. I, II, and III only
c. II only
d. I, II, III, and IV

ANS: A

	Feedback
A	The noncartilaginous airways include the bronchioles and terminal bronchioles.
B	The noncartilaginous airways include the bronchioles and terminal bronchioles.
C	The noncartilaginous airways include the bronchioles and terminal bronchioles.
D	The noncartilaginous airways include the bronchioles and terminal bronchioles.

PTS: 1 DIF: Recall REF: The Noncartilaginous Airways
OBJ: 28

72. At which airway generation do Canals of Lambert appear?
a. 16 - 19
b. 12-15
c. 6-9
d. 20-26

ANS: A

	Feedback
A	The Canals of Lambert are present in the terminal bronchioles between the 16th and 19th airway generation.
B	The Canals of Lambert are present in the terminal bronchioles between the 16th and 19th airway generation.
C	The Canals of Lambert are present in the terminal bronchioles between the 16th and 19th airway generation.
D	The Canals of Lambert are present in the terminal bronchioles between the 16th and 19th airway generation.

PTS: 1 DIF: Recall REF: The Noncartilaginous Airways
OBJ: 28

73. At what point in the tracheobronchial tree are Clara cells present?
a. terminal bronchioles
b. respiratory bronchioles
c. subsegmental bronchi
d. bronchioles

ANS: A

	Feedback
A	Clara cells are found in the terminal bronchioles.
B	Clara cells are found in the terminal bronchioles.
C	Clara cells are found in the terminal bronchioles.
D	Clara cells are found in the terminal bronchioles.

PTS: 1 DIF: Recall REF: The Noncartilaginous Airways
OBJ: 28

74. How does the total cross-sectional area of the tracheobrochial tree change from the trachea to the respiratory zone?
a. It increases steadily to the terminal bronchioles then increases significantly in the respiratory zone
b. It decreases slightly to the terminal bronchioles then decreases significantly
c. It remains steady throughout the tracheobronchial tree
d. It increases steadily through the lobar bronchi then increases significantly through the remaining airway generations

ANS: A

	Feedback
A	The total cross-sectional area increases steadily to the terminal bronchioles then increases significantly in the respiratory zone.
B	The total cross-sectional area increases steadily to the terminal bronchioles then increases significantly in the respiratory zone.
C	The total cross-sectional area increases steadily to the terminal bronchioles then increases significantly in the respiratory zone.
D	The total cross-sectional area increases steadily to the terminal bronchioles then increases significantly in the respiratory zone.

PTS: 1 DIF: Recall REF: Bronchial Cross Sectional Area
OBJ: 29

75. Which structures are nourished by the bronchial arteries?
a. trachea through the terminal bronchioles
b. respiratory zone
c. trachea and mainstem bronchi only
d. noncartilaginous airways only

ANS: A

	Feedback
A	The brachial arteries nourish the tracheobronchial tree from the trachea through terminal bronchioles.
B	The brachial arteries nourish the tracheobronchial tree from the trachea through terminal bronchioles.
C	The brachial arteries nourish the tracheobronchial tree from the trachea through terminal bronchioles.
D	The brachial arteries nourish the tracheobronchial tree from the trachea through terminal bronchioles.

PTS: 1 DIF: Recall REF: Bronchial Blood Supply
OBJ: 30

76. In the adult male, approximately how many alveoli are present in the lungs?
a. 300 million
b. 600 million
c. 180 million
d. 130 million

ANS: A

	Feedback
A	In the adult male lungs, approximately 300 million alveoli are present.
B	In the adult male lungs, approximately 300 million alveoli are present.
C	In the adult male lungs, approximately 300 million alveoli are present.
D	In the adult male lungs, approximately 300 million alveoli are present.

PTS: 1 DIF: Recall REF: The Sites of Gas Exchange
OBJ: 31

77. What type of epithelium composes 95% of the alveolar surface?
a. Type I (squamous pneumocyte)
b. Type II (cuboidal)
c. Type III (macrophages)
d. Type IV (pseudostratified squamous)

ANS: A

	Feedback
A	Ninety-five percent of the alveolar surface is lined with squamous or Type I pneumocytes.
B	Ninety-five percent of the alveolar surface is lined with squamous or Type I pneumocytes.
C	Ninety-five percent of the alveolar surface is lined with squamous or Type I pneumocytes.
D	Ninety-five percent of the alveolar surface is lined with squamous or Type I pneumocytes.

PTS: 1 DIF: Recall REF: The Sites of Gas Exchange
OBJ: 31

78. In the lungs of a healthy young adult male, what is the average surface area available for gas exchange?
a. 70 square meters
b. 100 square meters
c. 300 square meters
d. 50 square meters

ANS: A

	Feedback
A	In a healthy young male, there are approximately 70 square meters of surface area available for gas exchange.
B	In a healthy young male, there are approximately 70 square meters of surface area available for gas exchange.
C	In a healthy young male, there are approximately 70 square meters of surface area available for gas exchange.
D	In a healthy young male, there are approximately 70 square meters of surface area available for gas exchange.

PTS: 1 DIF: Recall REF: The Sites of Gas Exchange
OBJ: 31

79. Which alveolar cells are considered to be the source of pulmonary surfactant?
a. Type II
b. Type III
c. Type IV
d. Type I

ANS: A

	Feedback
A	Type II pneumocytes are considered to be the source of pulmonary surfactant.
B	Type II pneumocytes are considered to be the source of pulmonary surfactant.
C	Type II pneumocytes are considered to be the source of pulmonary surfactant.
D	Type II pneumocytes are considered to be the source of pulmonary surfactant.

PTS: 1 DIF: Recall REF: The Sites of Gas Exchange
OBJ: 32

80. What is the term for the openings in the walls of interalveolar septa?
a. Pores of Kohn
b. Canals of Lambert
c. Clara cells
d. Loose space

ANS: A

	Feedback
A	Pores of Kohn are openings in the walls of interalveolar septa.
B	Pores of Kohn are openings in the walls of interalveolar septa.
C	Pores of Kohn are openings in the walls of interalveolar septa.
D	Pores of Kohn are openings in the walls of interalveolar septa.

PTS: 1 DIF: Recall REF: Pores of Kohn
OBJ: 32

81. What is the average thickness of the Type I alveolar cell?
a. 0.1-0.5 microns
b. 0.1-0.5 mm
c. 1-5 microns
d. 1-5 mm

ANS: A

	Feedback
A	The average thickness of the Type I pneumocyte is 0.1 - 0.5 microns.
B	The average thickness of the Type I pneumocyte is 0.1 - 0.5 microns.
C	The average thickness of the Type I pneumocyte is 0.1 - 0.5 microns.
D	The average thickness of the Type I pneumocyte is 0.1 - 0.5 microns.

PTS: 1 DIF: Recall REF: Alveolar Epithelium
OBJ: 32

82. Which alveolar cells are macrophages?
a. Type III
b. Type II
c. Type I
d. Type IV

ANS: A

	Feedback
A	Macrophages are Type III alveolar cells.
B	Macrophages are Type III alveolar cells.
C	Macrophages are Type III alveolar cells.
D	Macrophages are Type III alveolar cells.

PTS: 1 DIF: Recall REF: Alveolar Macrophages
OBJ: 32

83. In which portion of the primary lobule does the majority of gas exchange occur?
a. tight space of interstitium
b. loose space of intestitium
c. Pores of Kohn
d. Type II pneumocyte

ANS: A

	Feedback
A	The majority of gas exchange occurs in the tight space between the alveolar epithelium and capillary endothelium.
B	The majority of gas exchange occurs in the tight space between the alveolar epithelium and capillary endothelium.
C	The majority of gas exchange occurs in the tight space between the alveolar epithelium and capillary endothelium.
D	The majority of gas exchange occurs in the tight space between the alveolar epithelium and capillary endothelium.

PTS: 1 DIF: Recall REF: Intersitium OBJ: 33

84. What is the inner layer of the wall of the pulmonary artery called?
a. tunica intima
b. tunica media
c. tunica adventitia
d. tunica externicus

ANS: A

	Feedback
A	The innermost layer of the pulmonary artery's wall is called the tunica intima.
B	The innermost layer of the pulmonary artery's wall is called the tunica intima.
C	The innermost layer of the pulmonary artery's wall is called the tunica intima.
D	The innermost layer of the pulmonary artery's wall is called the tunica intima.

PTS: 1 DIF: Recall REF: Arteries OBJ: 34

85. What type of epithelium is present in the pulmonary capillaries?
a. squamous
b. pseudostratified squamous
c. cuboidal
d. pseudostratified columnar

ANS: A

	Feedback
A	The pulmoary capillaries are composed of squamous epithelial cells.
B	The pulmoary capillaries are composed of squamous epithelial cells.
C	The pulmoary capillaries are composed of squamous epithelial cells.
D	The pulmoary capillaries are composed of squamous epithelial cells.

PTS: 1 DIF: Recall REF: Capillaries OBJ: 34

86. How many pulmonary veins empty into the left atrium?

a. 4
b. 2
c. 8
d. 0

ANS: A

	Feedback
A	Four pulmonary veins empty into the left atrium.
B	Four pulmonary veins empty into the left atrium.
C	Four pulmonary veins empty into the left atrium.
D	Four pulmonary veins empty into the left atrium.

PTS: 1 DIF: Recall REF: Venules and Veins
OBJ: 34

87. From what area deep in the lungs do lymphatic vessels arise?

a. loose space of interstitium
b. tight space of interstitium
c. Type II alveolar cells
d. Type III alveolar cells

ANS: A

	Feedback
A	Lymphatic vessels arise from the loose space of the interstitium.
B	Lymphatic vessels arise from the loose space of the interstitium.
C	Lymphatic vessels arise from the loose space of the interstitium.
D	Lymphatic vessels arise from the loose space of the interstitium.

PTS: 1 DIF: Recall REF: The Lymphatic System
OBJ: 35

88. On which portion(s) of the right lung surfaces would the majority of lymphatic vessels be located?

a. lower lobes
b. upper lobes
c. middle lobe
d. Lymphatic vessels are distributed equally on all lobes

ANS: A

	Feedback
A	The majority of lymphatic vessels are located over the surfaces of the lower lobes of the lungs.
B	The majority of lymphatic vessels are located over the surfaces of the lower lobes of the lungs.
C	The majority of lymphatic vessels are located over the surfaces of the lower lobes of the lungs.
D	The majority of lymphatic vessels are located over the surfaces of the lower lobes of the lungs.

PTS: 1 DIF: Recall REF: The Lymphatic System
OBJ: 35

89. What is the term for the vessels adjacent to peribronchovascular lymphatic vessels?

a. juxta-alveolar lymphatics
b. Type IV lymphatics
c. tertiary lymphatics
d. cardinal lymphatics

ANS: A

	Feedback
A	The vessels adjacent to the peribronchovascular lymphatics are called juxta-alveolar lymphatics.
B	The vessels adjacent to the peribronchovascular lymphatics are called juxta-alveolar lymphatics.
C	The vessels adjacent to the peribronchovascular lymphatics are called juxta-alveolar lymphatics.
D	The vessels adjacent to the peribronchovascular lymphatics are called juxta-alveolar lymphatics.

PTS: 1 DIF: Recall REF: The Lymphatic System
OBJ: 35

90. What effect does stimulation of the beta 2 receptors have on the pulmonary system?

a. bronchdilation
b. bronchoconstriction
c. vasoconstriction
d. vasodilation

ANS: A

	Feedback
A	Stimulation of the beta 2 receptors of the sympathetic nervous system results in bronchial smooth muscle relaxation (bronchdilation).
B	Stimulation of the beta 2 receptors of the sympathetic nervous system results in bronchial smooth muscle relaxation (bronchdilation).
C	Stimulation of the beta 2 receptors of the sympathetic nervous system results in bronchial smooth muscle relaxation (bronchdilation).
D	Stimulation of the beta 2 receptors of the sympathetic nervous system results in bronchial smooth muscle relaxation (bronchdilation).

PTS: 1 DIF: Recall REF: Neural Control of the Lungs
OBJ: 36

91. Which neurotransmitter is released when the parasympathetic system is activated?

a. acetylcholine
b. epinephrine
c. norepinephrine
d. prostaglandin

ANS: A

	Feedback
A	Acetylcholine is the neurotransmitter released when the parasympathetic nervous system is activated.
B	Acetylcholine is the neurotransmitter released when the parasympathetic nervous system is activated.
C	Acetylcholine is the neurotransmitter released when the parasympathetic nervous system is activated.
D	Acetylcholine is the neurotransmitter released when the parasympathetic nervous system is activated.

PTS: 1 DIF: Recall REF: Neural Control of the Lungs
OBJ: 36

92. What is the general term for drugs that block the effects of the parasymphathetic nervous system on the bronchial smooth muscle?

a. anticholinergic
b. beta adrenergic
c. parasympathomimetic
d. sympathomimetic

ANS: A

	Feedback
A	Drugs that block the parasympathetic system's effect of constriction of the bronchial smooth muscle are called anticholinergic or parasympatholytic.
B	Drugs that block the parasympathetic system's effect of constriction of the bronchial smooth muscle are called anticholinergic or parasympatholytic.
C	Drugs that block the parasympathetic system's effect of constriction of the bronchial smooth muscle are called anticholinergic or parasympatholytic.
D	Drugs that block the parasympathetic system's effect of constriction of the bronchial smooth muscle are called anticholinergic or parasympatholytic.

PTS: 1 DIF: Recall
REF: Neural Control of the Lungs|Clinical Connection 1-16: The Role of Neural Control Agents in Respiratory Care OBJ: 38

93. What effect does stimulation of the sympathetic nervous system have on the body?

I. Dilates the pupils
II. Causes bronchodilation
III. Increases rate and force of cardiac contractions

a. I, II, and III
b. II and III only
c. I and III only
d. II and III only

ANS: A

	Feedback
A	When the sympathetic nervous system is stimulated, the pupils dilate, bronchodilation occurs and the heart beats faster and with more force.
B	When the sympathetic nervous system is stimulated, the pupils dilate, bronchodilation occurs and the heart beats faster and with more force.
C	When the sympathetic nervous system is stimulated, the pupils dilate, bronchodilation occurs and the heart beats faster and with more force.
D	When the sympathetic nervous system is stimulated, the pupils dilate, bronchodilation occurs and the heart beats faster and with more force.

PTS: 1 DIF: Recall REF: Neural Control of the Lungs
OBJ: 37

94. When an acute asthma episode occurs, which quick relief agent is most commonly administered?
a. albuterol
b. formoterol
c. salmeterol
d. arformoterol

ANS: A

	Feedback
A	Albuterol is the quick relief agent most commonly administered to provide quick relief of acute asthma symptoms.
B	Albuterol is the quick relief agent most commonly administered to provide quick relief of acute asthma symptoms.
C	Albuterol is the quick relief agent most commonly administered to provide quick relief of acute asthma symptoms.
D	Albuterol is the quick relief agent most commonly administered to provide quick relief of acute asthma symptoms.

PTS: 1 DIF: Recall
REF: Neural Control of the Lungs|Clinical Connection 1-17: An Asthmatic Episode and the Role of Bronchodilator and Anti-Inflammatory Drugs OBJ: 39

95. In the healthy adult, what are the normal anterior boundaries of the lungs?
a. Between first and sixth ribs
b. Between first and eigth ribs
c. Between the second and ninth ribs
d. Between the second and eleventh ribs

ANS: A

	Feedback
A	In the healthy adult, the lungs extend anteriorly between the first and sixth ribs.
B	In the healthy adult, the lungs extend anteriorly between the first and sixth ribs.
C	In the healthy adult, the lungs extend anteriorly between the first and sixth ribs.
D	In the healthy adult, the lungs extend anteriorly between the first and sixth ribs.

PTS: 1 DIF: Recall REF: The Lungs OBJ: 40

96. What is the term for the uppermost portion of the upright lung?
a. apex
b. base
c. lingula
d. hilum

ANS: A

	Feedback
A	The apex is the uppermost portion of the upright lung.
B	The apex is the uppermost portion of the upright lung.
C	The apex is the uppermost portion of the upright lung.
D	The apex is the uppermost portion of the upright lung.

PTS: 1 DIF: Recall REF: The Lungs OBJ: 40

97. How many bronchopulmonary segments are located in the lower lobe of the right lung?
a. 5
b. 4
c. 3
d. 2

ANS: D

	Feedback
A	There are five bronschopulmonary segments in the lower lobe of the right lung.
B	There are five bronschopulmonary segments in the lower lobe of the right lung.
C	There are five bronschopulmonary segments in the lower lobe of the right lung.
D	There are five bronschopulmonary segments in the lower lobe of the right lung.

PTS: 1 DIF: Recall REF: The Lungs (Figure 1-41)
OBJ: 41

98. What is the term for the therapeutic positional measures which utilize gravity to assist in secretion removal from the lungs?
a. postural drainage
b. vibration
c. percussion
d. chest wall oscillation

ANS: A

	Feedback
A	Postural drainage uses gravity to assist with secretion removal from the lungs
B	Postural drainage uses gravity to assist with secretion removal from the lungs
C	Postural drainage uses gravity to assist with secretion removal from the lungs
D	Postural drainage uses gravity to assist with secretion removal from the lungs

PTS: 1 DIF: Recall
REF: The Lungs|Clinical Connection 1-18: Postural Drainage Therapy
OBJ: 42

99. Which structures are contained in the mediastinum?

I. Trachea
II. Great vessels
III. Portions of the esophagus
IV. Pituitary gland

a. I, II, and III only
b. I, II, III, and IV
c. I and II only
d. I, II, and IV only

ANS: A

	Feedback
A	The trachea, great vessels, and portions of the espohagus are contained in the mediastinum.
B	The trachea, great vessels, and portions of the espohagus are contained in the mediastinum.
C	The trachea, great vessels, and portions of the espohagus are contained in the mediastinum.
D	The trachea, great vessels, and portions of the espohagus are contained in the mediastinum.

PTS: 1 DIF: Recall REF: The Mediatinum
OBJ: 43

100. What is the term for the potential space between the visceral and parietal pleura?
a. pleural cavity
b. mediatinum
c. pericardial cavity
d. thoracic cavity

ANS: A

	Feedback
A	The potential space between the pleura is called the pleural cavity.
B	The potential space between the pleura is called the pleural cavity.
C	The potential space between the pleura is called the pleural cavity.
D	The potential space between the pleura is called the pleural cavity.

PTS: 1 DIF: Recall REF: The Pleural Membranes
OBJ: 44

101. What is the superior portion of the sternum called?
a. manubrium sterni
b. body
c. xiphoid process
d. maxilla sterni

ANS: A

	Feedback
A	The superior portion of the sternum is the manubrium sterni.
B	The superior portion of the sternum is the manubrium sterni.
C	The superior portion of the sternum is the manubrium sterni.
D	The superior portion of the sternum is the manubrium sterni.

PTS: 1 DIF: Recall REF: The Thorax OBJ: 47

102. What is the term for inflammation of the pleural membranes?
a. pleurisy
b. pleural effusion
c. empyema
d. pneumothorax

ANS: A

	Feedback
A	Inflammation of the pleural membranes is called pleurisy.
B	Inflammation of the pleural membranes is called pleurisy.
C	Inflammation of the pleural membranes is called pleurisy.
D	Inflammation of the pleural membranes is called pleurisy.

PTS: 1 DIF: Recall
REF: The Pleural Membranes|Clinical Connection 1-19: Abnormal Conditions of the Pleural membranes OBJ: 45

103. What is the term for the abnormal collection of fluid in the pleural cavity?
a. pleural effusion
b. empyema
c. pneumothorax
d. hemothorax

ANS: A

	Feedback
A	The abnormal accumulation of fluid in the pleural cavity is called pleural effusion.
B	The abnormal accumulation of fluid in the pleural cavity is called pleural effusion.
C	The abnormal accumulation of fluid in the pleural cavity is called pleural effusion.
D	The abnormal accumulation of fluid in the pleural cavity is called pleural effusion.

PTS: 1 DIF: Recall
REF: The Pleural Membranes|Clinical Connection 1-19: Abnormal Conditions of the Pleural membranes OBJ: 45

104. In a pneumothorax, where does the abnormal collection of air accumulate?

a. pleural cavity
b. thoracic cavity
c. mediastinum
d. pericardium

ANS: A

	Feedback
A	A pneumothorax is an abnormal accumulation of air in the pleural cavity.
B	A pneumothorax is an abnormal accumulation of air in the pleural cavity.
C	A pneumothorax is an abnormal accumulation of air in the pleural cavity.
D	A pneumothorax is an abnormal accumulation of air in the pleural cavity.

PTS: 1 DIF: Recall
REF: The Pleural Membranes|Clinical Connection 1-20: Pneumothorax
OBJ: 46

105. What is one of the most common iatrogenic complications from a thoracentesis?

a. pneumothorax
b. hemorrhage
c. empyema
d. pleural effusion

ANS: A

	Feedback
A	An iatrogenic pneumothorax is one of the most common complication from a thoracentesis.
B	An iatrogenic pneumothorax is one of the most common complication from a thoracentesis.
C	An iatrogenic pneumothorax is one of the most common complication from a thoracentesis.
D	An iatrogenic pneumothorax is one of the most common complication from a thoracentesis.

PTS: 1 DIF: Recall
REF: The Thorax|Clinical Connection 1-21: Puncture Site for a Thoracentesis
OBJ: 48

106. Which ribs are identified as floating ribs?

a. 11 and 12
b. 7-12
c. 7-10
d. 9-12

ANS: A

	Feedback
A	Rib eleven and twelve are called floating ribs since they do not have an anterior attachment.
B	Rib eleven and twelve are called floating ribs since they do not have an anterior attachment.
C	Rib eleven and twelve are called floating ribs since they do not have an anterior attachment.
D	Rib eleven and twelve are called floating ribs since they do not have an anterior attachment.

PTS: 1 DIF: Recall REF: The Thorax OBJ: 47

107. Which nerves supply the primary motor innervation to the right and left hemidiaphragms?

a. phrenic
b. vagus
c. IX cranial
d. Thoracic nerves 1-3

ANS: A

	Feedback
A	The hemidiaphragms receive their primary motor innervation from the terminal branches of the phrenic nerves.
B	The hemidiaphragms receive their primary motor innervation from the terminal branches of the phrenic nerves.
C	The hemidiaphragms receive their primary motor innervation from the terminal branches of the phrenic nerves.
D	The hemidiaphragms receive their primary motor innervation from the terminal branches of the phrenic nerves.

PTS: 1 DIF: Recall
REF: Muscles of Ventilation|Clinical Connection 1-22: Spinal Cord Trauma and Diaphragmatic Paralysis OBJ: 50

108. Which structure moves in a “pump handle-like motion” during inspiration?

a. sternum
b. external intercostals
c. diaphragm
d. internal intercostals

ANS: A

	Feedback
A	The sternum moves up in a pump handle-like motion during inspiration and increases the anterior-posterior portion of the thorax.
B	The sternum moves up in a pump handle-like motion during inspiration and increases the anterior-posterior portion of the thorax.
C	The sternum moves up in a pump handle-like motion during inspiration and increases the anterior-posterior portion of the thorax.
D	The sternum moves up in a pump handle-like motion during inspiration and increases the anterior-posterior portion of the thorax.

PTS: 1 DIF: Recall REF: Muscles of Ventilation
OBJ: 47

109. Which of the following are accessory muscles of inspiration?

I. External intercostals
II. Scalenus muscles
III. Transverse abdominus
IV. Trapezius muscles

a. I, II, and IV only
b. I, III, and IV only
c. I and II only
d. I, II, III, and IV

ANS: A

	Feedback
A	The accessory muscles of inspiration include the external intercostals, the scalenus and trapezius muscles along with the pectoralis major and sternocleidomastoid muscles.
B	The accessory muscles of inspiration include the external intercostals, the scalenus and trapezius muscles along with the pectoralis major and sternocleidomastoid muscles.
C	The accessory muscles of inspiration include the external intercostals, the scalenus and trapezius muscles along with the pectoralis major and sternocleidomastoid muscles.
D	The accessory muscles of inspiration include the external intercostals, the scalenus and trapezius muscles along with the pectoralis major and sternocleidomastoid muscles.

PTS: 1 DIF: Recall REF: The Accessory Muscles of Inspiration
OBJ: 51

110. Which of the following are accessory muscles of expiration?

I. Rectus abdominis
II. Transverse abdominis
III. Internal intercostals
IV. Pectoralis major

a. I. II, and III only
b. I and II only
c. II, III, and IV only
d. I, II, III, and IV only

ANS: A

	Feedback
A	Of the listed muscle groups, only the pectoralis major muscle is NOT an accessory muscle of expiration.
B	Of the listed muscle groups, only the pectoralis major muscle is NOT an accessory muscle of expiration.
C	Of the listed muscle groups, only the pectoralis major muscle is NOT an accessory muscle of expiration.
D	Of the listed muscle groups, only the pectoralis major muscle is NOT an accessory muscle of expiration.

PTS: 1 DIF: Recall REF: Accessory Muscles of Expiration
OBJ: 52