Anatomy Midterm Material Test Bank

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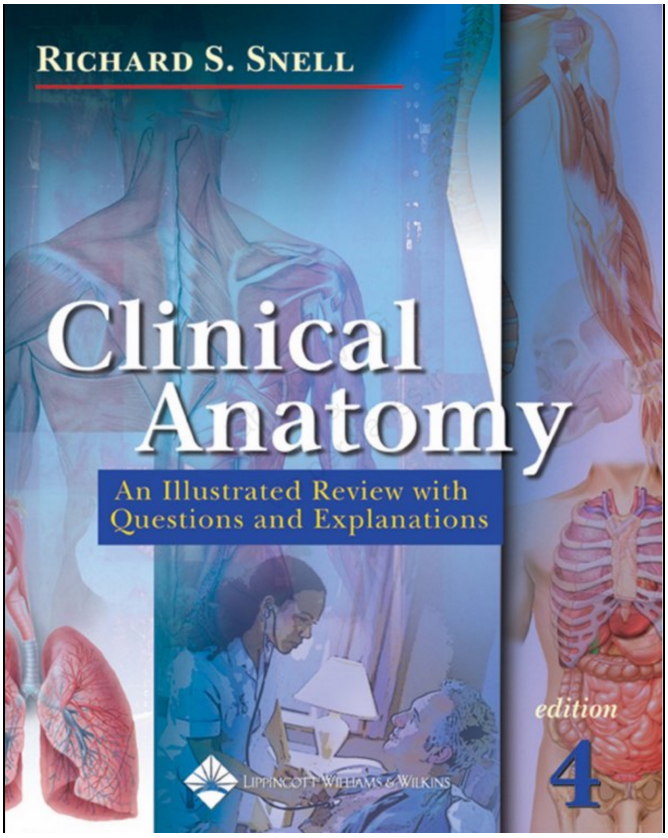

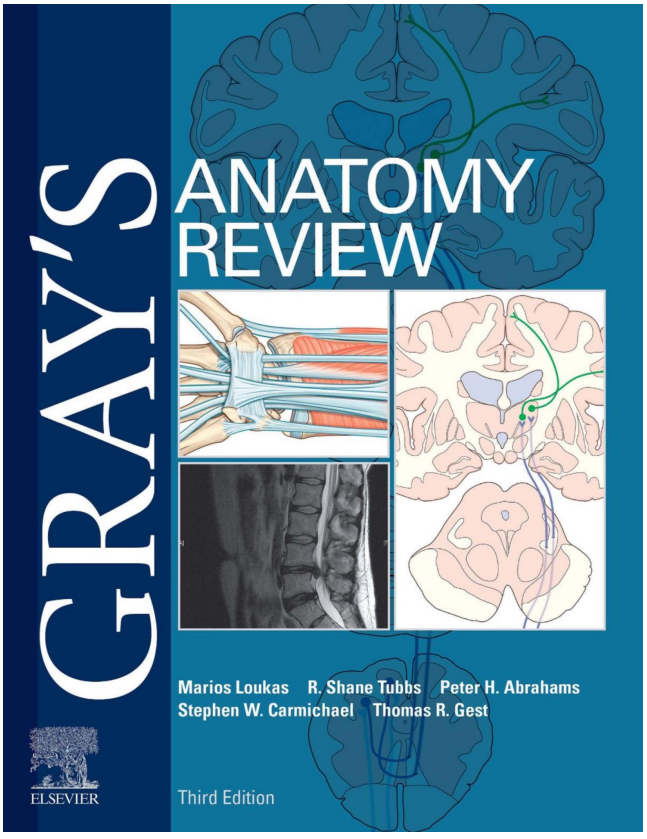

1. The middle ethmoid sinuses drain into the
A. middle meatus of the nose.
B. superior meatus of the nose.
C. sphenoethmoidal recess.
D. inferior meatus of the nose.
E. nasolacrimal duct.

2. The sphenoid sinus drains into the
A) superior meatus of the nose.
B) inferior meatus of the nose.
C) sphenoethmoidal recess.
D) nasolacrimal duct.
E) middle meatus of the nose.

3. The frontal sinus drains into the
A) middle meatus of the nose.
B) lacrimal sac.
C) inferior meatus of the nose.
D) sphenoethmoidal recess.
E) superior meatus of the nose.

4. The anterior ethmoidal sinuses drain into the
A) lacrimal sac.
B) superior meatus of the nose.
C) middle meatus of the nose.
D) sphenoid sinus.
E) inferior meatus of the nose.

5. The nasolacrimal duct drains into the
A) lacrimal sac.
B) inferior meatus of the nose.
C) superior meatus of the nose.
D) middle meatus of the nose.
E) sphenoethmoidal recess.

6. Sustained tension of the vocal cords (folds) is best achieved through the action of which of the following muscles?
A. The cricopharyngeus
B. The cricothyroid
C. The aryepiglottic
D. The salpingopharyngeus
E. The posterior cricoarytenoid

7. Which ofthe following nerves might be injured when tying the inferior thyroid artery during operations on the thyroid gland?
A. The sympathetic trunk
B. The internal laryngeal nerve
C. The descendens cervicalis
D. The recurrent laryngeal nerve
E. The superior laryngeal nerve

8. A patient has lost cutaneous sensation over the tip of the nose. Which nerve is most likely to be damaged?
A. The facial nerve
B. The ophthalmic division of the trigeminal nerve
C. The greater auricular nerve
D. The mandibular division of the trigeminal nerve
E.The maxillary division of the trigeminal nerve

9. A patient has a boil on the tip of her nose. To which lymph nodes does the lymph from the skin of the infected area drain?
A. Submandibular nodes
B. Submental nodes
C. Parotid nodes
D. Superficial cervical nodes
E. Tracheobronchial nodes

1. A. On the bulla ethmoidalis.

2. C

3. A. Via the infundibulum.

4. C.

5. B.

6. B. The cricothyroid muscle, which tilts the cricoid cartilage and the arytenoid cartilages backward and thus tenses the vocal cords.

7. D. Note that the superior thyroid artery is closely related to the external laryngeal nerve.

8. B. The skin of the tip of the nose is innervated by external nasal branch of the nasociliary branch of the ophthalmic division of the trigeminal nerve.

9. A.

1. A 22-year-old man is brought to the emergency department after being found unconscious on the street. The man is not responsive and breathing very slowly. His oxygen saturation is dangerously low and intubation is initiated by passing an endotracheal tube through an opening between the vocal folds. What is the name of this opening?
A)Piriform recess
B) Vestibule
C) Ventricle
D) Vallecula
E) Rima glottidis

2. A 55-year-old man is brought to the emergency department with left-sided tooth pain in his upper jaw. Physical examination shows tenderness on the left side of his face and ipsilateral maxillary teeth when tapping on his left maxilla. The patient has no allergies. Which of the following conditions will be the most likely diagnosis?
A) Sphenoid sinusitis
B) Anterior ethmoidal sinusitis
C) Posterior ethmoidal sinusitis
D) Maxillary sinusitis
E) Frontal sinusitis

3. A 29-year-old woman comes to the physician for a follow-up examination, two weeks after undergoing a thyroidectomy. She was diagnosed with intractable Graves disease. She says her wound has healed well and she has noticed a significant improvement in her symptoms, but her voice has become hoarse and has not improved.
Which of the following nerves was most likely injured during the operation?
A) Internal laryngeal
B) External laryngeal
C) Recurrent laryngeal
D) Superior laryngeal
E) Glossopharyngeal

4. A 55-year-old woman comes to the physician for worsening chronic headaches from a right-sided tumor at the base of the skull. She has recently noticed her right eye and right nostril constantly feel dry. Which of the following nerves is most likely compressed by a tumor to result in a decreased secretion from the lacrimal gland and mucous membrane of her nasal passage?
A) Chorda tympani
B) Deep petrosal
C) Greater petrosal
D) Lesser petrosal
E) Nasociliary

1. E. The rima glottidis is the opening between the vocal folds and the arytenoid cartilages on the right and left sides.
A. The piriform recess is the recess in the laryngophar-ynx lateral to the laryngeal opening.

B. The vestibule is the region between the epiglottis and rima glottidis.

C. The ventricle is the area between the true and false vocal cords.
D. The vallecula is a bilateral recess in the laryngophar-ynx anterior to the epiglottis just posterior to the tongue

2. D. Maxillary sinusitis is an infection of the maxillary sinus, which is located in the body of the maxillary bone. Sharp pain can be a major symptom of maxillary sinusitis. The difference between the remaining answer choices is the location of the sinus.
A. The sphenoidal sinus is located posterosuperior to the nasopharynx.
B and C. The ethmoidal sinuses are located laterosupe-riorly to the nasal septum.
E. The frontal sinus is located in the frontal bone in the anterior part of the face.

3. C. The recurrent laryngeal nerve supplies most of the motor innervation to the larynx and sensation below the true vocal folds. The thyroid gland and the recurrent laryngeal nerve are in close proximity and thus the nerve is the most likely to be injured with a thyroidectomy. Injury to the recurrent laryngeal nerve can result in speech defects, including hoarseness.
A, B, and D. The superior laryngeal nerve has two branches: the internal laryngeal nerve innervates the mucous membranes of the larynx above the vocal folds, and the external laryngeal nerve innervates the crico-thyroid muscle, which tenses the vocal folds.
E. The glossopharyngeal nerve is located superiorly to the true vocal folds and would not be affected by this procedure.

4. C. The greater petrosal nerve, a parasympathetic branch of the facial nerve, provides innervation to the lacrimal gland in the orbit.
The chorda tympani provides innervation to the submandibular and sublingual glands and also taste to the anterior two-thirds of the tongue.
The deep petrosal nerve carries sympathetic inner-vation to the blood vessels and mucous glands of the head and neck.
The lesser petrosal nerve provides parasympathetic innervation to the parotid gland.
The nasociliary nerve provides sensory innerva-tion to the ethmoidal sinuses and the cornea as well as innervation to the skin of the upper eyelid medially as well as the superior nose regions laterally.

5. A 12-year-old boy is brought into the office because of headaches, runny nose, and a fever. His temperature is 37.2°C (99°F), pulse is 90/min, and respirations are 18/min. Physical examination shows tenderness when the physician taps the area slightly superior to the midportion of the patient's eyebrows. Which of the following anatomic areas is the physician most likely examining?
A) Maxillary sinus
B) Transverse sinus
C) Frontal sinus
D) Sphenoid sinus
E) Ethmoid sinus

6. A 21-year-old man was brought to the emergency department because of a severe nosebleed. The bleeding has stopped, and the patient is otherwise stable. The area known as Kiesselbach (or Little) plexus is the most common area where epistaxis originates from. This area is exposed to environmental changes and trauma.
Which of the following arteries most likely provide anastomoses to this area?
A) Ascending palatine and ascending pharyngeal
B) Posterior superior alveolar and accessory meningeal
C) Lateral branches of posterior ethmoidal and middle meningeal
D) Septal branches of the sphenopalatine and superior labial
E) Descending palatine and tonsillar branches of the pharyngeal

7. A 35-year-old woman comes to the physician for a scheduled laparoscopic cholecystectomy. In the operating room, a laryngeal mask airway has been placed to deliver continuous anesthesia and ensure proper oxygenation during the surgery. This mask is composed of an air tube with an inflatable or self-sealing cuff. It is inserted through the mouth until the cuff rests against the top of the glottis and helps keep the airway open.
Under normal conditions, the rima glottidis is opened by which pair of muscles?
A) Posterior cricoarytenoids
B) Lateral cricoarytenoids
C) Thyroarytenoids
D) Transverse arytenoids
E) Cricothyroids

5. C. The frontal sinuses are located in the frontal bone above the orbital margin.
A. The maxillary sinus is located on the sides of the nose below the cheeks and above the teeth, within the maxillary bone.
B. The transverse sinus is a dural venous sinus that drains the confluence of sinuses and runs along the inner aspect of the occipital bone surface.
The sphenoidal sinus is within the sphenoid bone and cannot be palpated externally.
The ethmoid sinus is a collection of small air cells located within the ethmoid bone between the nose and the eye.

6. D. Kiesselbach plexus (also called Little area) is an anastomosis of four arteries on the anterior nasal sep-tum. The four arteries are the anterior ethmoidal artery, sphenopalatine artery, superior labial artery, and greater palatine artery. The two largest contributors, however, are the septal branches of the sphenopalatine (from the maxillary artery) and superior labial arteries (branches of the facial artery, which in turn is a branch of the external carotid artery).
A, B, C, and E. These pairs of arteries do not contribute to Kiesselbach plexus.

7. A. The posterior cricoarytenoid muscles lie on the posterior aspect of the lamina of the cricoid cartilage.
When these muscles contract, they cause lateral rotation (abduction) of the vocal processes of the arytenoid cartilages, thereby opening the space between the vocal folds, the rima glottidis.
The lateral cricoarytenoid is involved with adducting the arytenoid cartilage and closing the rima glottidis.
The thyroarytenoid muscles lie alongside either vocal ligament and are also involved in adducting the vocal folds.
The transverse arytenoid muscle connects both ary-tenoid cartilages and also aids in closing the rima glottidis.
The cricothyroid muscle is located on the anterior aspect of the cricoid cartilage and aids in elongation and tensing of the vocal folds, thus preparing the vocal cords to vibrate or raising the pitch of the voice.

8. A 34-year-old woman comes to the emergency department because of a large mass at the center of her neck.
Physical examination and subsequent ultrasound show a tumor of the thyroid gland. Biopsy suggests a benign tumor but because of its large size a partial thyroidectomy is performed. Twenty-four hours following the surgery, in which the inferior thyroid artery was ligated, the patient develops hoarseness and has difficulty breathing on exertion. Which of the following nerves was most likely injured during the surgical procedure?
A) Internal branch of superior laryngeal
B) Ansa cervicalis
C) Ansa subclavia
D) Recurrent laryngeal
E) External branch of superior laryngeal

9. A 34-year-old woman comes to the physician for a scheduled partial thyroidectomy. In the recovery room, she has been having difficulties drinking fluid and is noted to aspirate into her lungs. The patient failed her swallow evaluation. Physical examination shows that the area of the piriform recess above the vocal fold of the larynx was anesthetized. Which of the following nerves was most likely injured?
A) External branch of the superior pharyngeal
B) Hypoglossal
C) Internal branch of the superior laryngeal
D) Lingual
E) Recurrent laryngeal

10) A 38-year-old man comes to the physician because of a large mass in his lower anterior neck. The patient works at a nuclear power plant. He says that the lump does not cause any pain, but he has some difficulty swal-lowing. An ultrasound examination confirms a benign tumor of the thyroid gland and a partial thyroidectomy is performed. Twenty-four hours following the surgery, physical examination shows the patient could not abduct the true vocal cords. Which of the following muscles was most likely denervated during the operation?
A) Posterior cricoarytenoid
B) Lateral cricoarytenoid
C) Thyroarytenoid
D) Arytenoid
E) Cricothyroid

11) A 46-year-old woman is brought to the hospital for a scheduled thyroidectomy to remove a thyroid gland tumor. During the procedure, the superior thyroid artery is identified and used as a landmark in order to not damage its small companion nerve. Which of the following nerves is most likely to accompany this artery?
A) Cervical sympathetic trunk
B) External branch of the superior laryngeal
C) Inferior root of the ansa cervicalis
D) Internal branch of the superior laryngeal
E) Recurrent laryngeal

8. D. The recurrent laryngeal nerve is the most likely nerve damaged during the surgery because it runs in close proximity to the inferior thyroid artery and is easily injured or transected with the artery if extreme care is not exercised during operative procedures. The recurrent laryngeal nerve innervates the majority of the vocal muscles that open and close the rima glottidis, in addition to providing sensory supply to the larynx below the vocal folds. Even relatively mild trauma to the nerve can result in hoarseness and difficulty in opening the glottis.
The internal branch of the superior laryngeal nerve is not in close proximity to the inferior thyroid artery and pierces the thyrohyoid membrane to enter the laryngopharynx.
The ansa cervicalis lies lateral to the site of surgery and does not innervate any structures that, if para-lyzed, would cause hoarseness.
The ansa subclavia is part of the cervical sympathetic trunk that forms a loop around the subclavian artery; it does not contribute to vocal cord movement, and thus would not cause hoarseness if injured.
E. The external branch of superior laryngeal innervates the cricothyroid muscle, tensing the vocal cords.
Damage to this nerve would cause hoarseness but would not cause difficulty in breathing.

9. C. During removal of the tumor, the internal branch of the superior laryngeal nerve was injured. Injury to this nerve results in loss of sensation above the vocal cords, at the entrance to the larynx, and loss of taste on the epi-glottis. Loss of sensation in the laryngeal vestibule can precipitate aspiration of fluid into the larynx, trachea, and lungs.
The pharyngeal nerve from the vagus nerve supplies motor innervation to the muscles of the pharynx, except the stylopharyngeus (glossopharyngeal nerve).
Injury to the external branch of the superior pharyngeal would cause an inability to change the pitch of the voice, leading to a monotone voice, as well as hoarseness.
Injury to the hypoglossal nerve would result in protrusion of the tongue toward the affected side and moderate dysarthria.
The lingual nerve conveys parasympathetic pregan-glionic fibers to the submandibular ganglion and general sensation and taste fibers for the anterior two-thirds of the tongue.
The recurrent laryngeal provides sensory fibers to the larynx below the vocal cords and motor fibers to all of the muscles of the larynx except for the cricothyroid.

10. A. The posterior cricoarytenoids are the only muscles of the larynx that abduct the vocal cords.
B, C, D, and E. The remaining answer choices are muscles that act in adduction of the vocal cords.

11. B. The external branch of the superior laryngeal nerve courses together with the superior thyroid artery for much of its route.
A. The cervical sympathetic trunk is located quite pos-teriorly to this location.
The inferior root of the ansa cervicalis is located more laterally in the anterior neck.
The internal branch of the superior laryngeal nerve takes a route superior to that of the external branch and the superior thyroid artery and would be unlikely to be injured in this case.
The recurrent laryngeal nerve terminates inferiorly, passing into the larynx in relation to the inferior thyroid artery or its branches.

12. A 38-year-old woman comes to the dental clinic with acute tooth pain. The woman admits to eating a lot of sweets and rarely seeing a dentist. The dentist found several dental caries, with the worst being a penetrating cavity affecting one of the mandibular molar teeth.
Which of the following nerves would the dentist need to anesthetize to treat the caries in that tooth?
A) Lingual
B) Inferior alveolar
C) Buccal
D) Mental
E) Mylohyoid

13. A 55-year-old man comes to the office because of pain while chewing for the past 3 months. Physical examination shows hoarseness of voice and pain on swallowing. A lateral x-ray of the neck shows a mass at the tracheoesophageal groove. Which of the following nerves is most likely affected by the mass?
A) Recurrent laryngeal
B) Internal laryngeal
C) Vagus
D) External laryngeal
E) Phrenic

14. A 34-year-old woman is brought to the emergency department with difficulty breathing. She was trying out food at a new restaurant in town 30 minutes ago. Her temperature is 37.6°C (99.68°F), pulse is 105/min, respirations are 28/min, blood pressure is 120/80 mm Hg, and oxygen saturation is approximately 80%. Physical examination shows a swollen tongue protruding from her mouth. The patient oxygen saturation does not improve with bag-mask ven-tilation. Intubation is unsuccessful because of massive soft tissue edema of her pharynx. A decision is made to perform a cricothyrotomy. After palpation of the neck to identify the appropriate landmarks, an incision should most likely be made at which of the following locations?
A) The cricothyroid membrane, which is located at the junction of the clavicle and the sternum
B) The cricothyroid membrane, which is located between the thyroid cartilage and the cricoid cartilage below
C) The thyrohyoid membrane, which is located between the thyroid cartilage (Adam's apple) and the hyoid bone above
D) The sternal notch, which is located at the junction of the clavicle and the sternum
E) The trachea, which is located below the cricoid cartilage

15. A 20-year-old man is brought to the emergency department after his motorcycle collided with a light pole. He was unable to recall all events of the incident and he feels pain on the right side of the head and face, lower back, right elbow, and right knee. His vital signs are within normal limits. Physical examination shows an alert and oriented man with multiple abrasions to his upper and lower limbs. There is a tender 6 × 6 cm swelling over the right temporal bone and a laceration to the superior aspect of the helix of the right ear. A CT scan of the head shows a minimally displaced fracture of the floor of the middle cranial fossa involving the pterygoid canal. Which of the following describes all fiber types that are most likely affected in this injury?
A. Presynaptic parasympathetic
B. Postsynaptic sympathetic; presynaptic parasympathetic
C. Postsynaptic sympathetic; postsynaptic parasympathetic
D. Special sensory; postsynaptic parasympathetic
E. General sensory; postsynaptic parasympathetic

12. B. The inferior alveolar branch of the mandibular division of the trigeminal nerve provides sensory inner-vation to the mandibular teeth and would require anesthesia to abolish painful sensation.
A. The lingual nerve provides taste and sensation to the anterior two-thirds of the tongue and carries general sensory fibers, taste fibers, and parasympathetic fibers. It does not provide sensory innerva-tion to the teeth.
C. The buccal nerve provides sensory innervation to the inner and outer surface of the cheek.
The mental nerve is the distal continuation of the inferior alveolar nerve as it exits the mental foramen of the mandible and does not affect the teeth.
The nerve to the mylohyoid is a motor branch of the inferior alveolar nerve that supplies the mylohy-oid and the anterior belly of the digastric.

13. A. The right and left recurrent laryngeal nerves loop around the right subclavian artery and the arch of the aorta, respectively. These nerves then travel supe-riorly in the tracheoesophageal groove to the larynx.
Damage to the recurrent laryngeal nerve as a result of surgical intervention or the presence of a tumor in the tracheoesophageal groove would render the patient hoarse. This hoarseness is because of a lack of innerva-tion by the recurrent laryngeal nerve to most of the muscles of the larynx.
Damage to the internal laryngeal nerve would cause a loss of sensation above the vocal cords, in addition to a loss of taste on the epiglottis.
The vagus nerve gives rise to the recurrent laryngeal nerves; damage to this nerve, however, would result in numerous symptoms beyond just hoarseness.
Damage to the external laryngeal nerve, which can occur during thyroidectomy, will result in a loss of innervation to the cricothyroid muscle, with resultant vocal weakness. Patients with this
E. lesion will often present with a fatigued voice.
Irritation or compression of the phrenic nerve can cause problems with breathing and triggered hiccup reflex not painful swallowing or hoarseness

14. A. The larynx receives sensory innervation from the vagus nerve via the internal branch of superior laryngeal nerve.
The glossopharyngeal nerve does not innervate the epiglottis.
The vestibulocochlear nerve mediates hearing and balance.
The hypoglossal nerve supplies motor fibers to the tongue muscles.
The facial nerve, while performing many functions including motor supply to muscles of facial expression and taste in the anterior two-thirds of the tongue, does not supply sensory nerves to the epiglottis.

15. B. Coursing through the pterygoid canal are the artery, vein, and nerve of the pterygoid canal (Vidian canal).
A, C, D, E. The nerve of the pterygoid canal (Vidian nerve) contains presynaptic parasympathetic fibers from the facial nerve via the greater petrosal nerve, which eventually go on to synapse in the pterygopal-atine ganglion, and postsynaptic sympathetic fibers from the deep petrosal nerve, which do not synapse in pterygopalatine ganglion