

YR 1 GROSS ANATOMY WRITTEN EXAM 2 -- October 10, 1997.

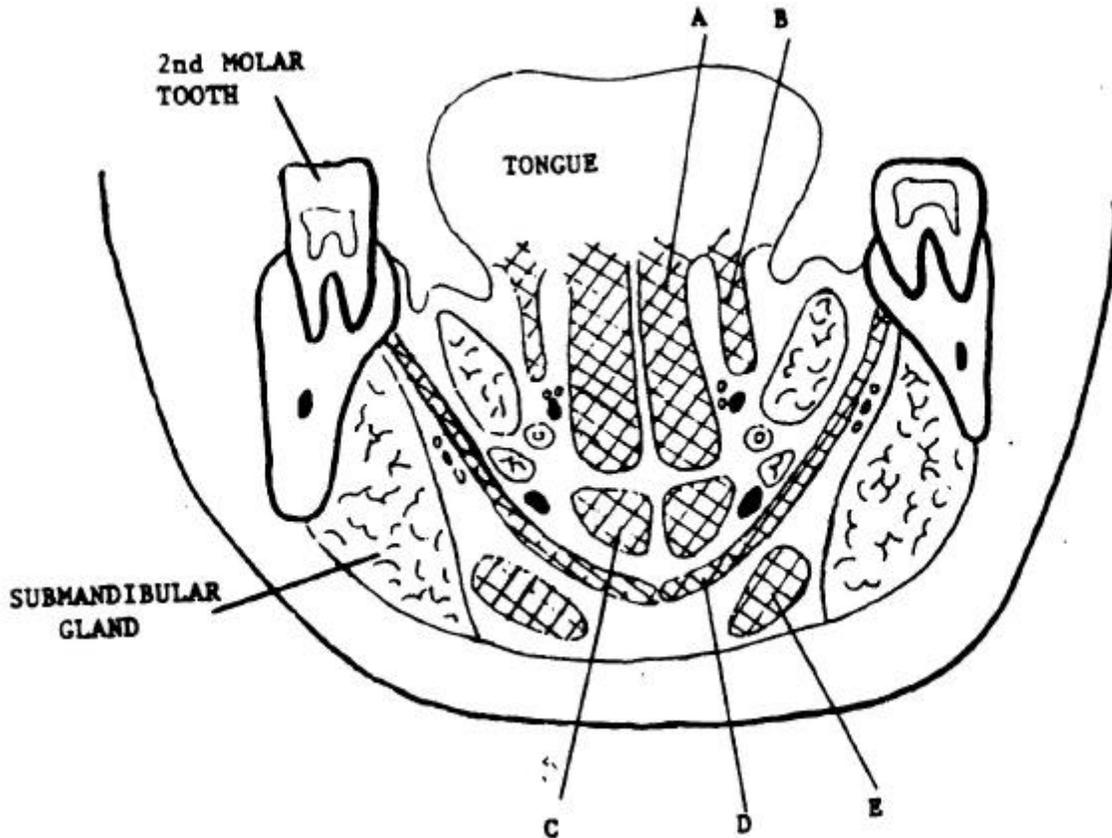
CHOOSE THE SINGLE BEST ANSWER FOR QUESTIONS 1 - 42.

1. Each of the following statements is CORRECT EXCEPT:
 - A. The supraclavicular nerves supply sensory fibers to the skin of the clavicular area
 - B. The great auricular nerve is a sensory branch of the mandibular division of the trigeminal nerve and supplies the skin of the external ear
 - C. The dorsal scapular nerve (C-5) pierces the middle scalene muscle and courses deep to the levator scapulae
 - D. The suprascapular nerve accompanies the suprascapular artery and vein
 - E. The lesser occipital nerve emerges near the middle of the posterior border of the sternocleidomastoid muscle and courses along its posterior edge

2. Each relationship of the maxilla is CORRECT EXCEPT:
 - A. Anteriorly - some muscles of facial expression
 - B. Inferiorly - oral cavity
 - C. Medially - frontal sinus
 - D. Superiorly - orbit
 - E. Posteriorly - pterygopalatine fossa

3. All of the statements regarding the scalp are CORRECT EXCEPT:
 - A. Nerves supplying this region include the lesser occipital and the auriculotemporal
 - B. Arteries supplying this region include the occipital and supraorbital
 - C. At the vertex, it is comprised of four layers
 - D. Its veins lack valves
 - E. The facial nerve supplies voluntary motor innervation to layer three muscles

4. This diagram is a frontal section through the oral cavity at the level of the second molar tooth. Nerves are indicated by solid ovals, ducts by concentric circles and muscles are cross hatched. Question 4 pertains to the labelled structures in this figure:



Which of the following is INCORRECT:

- A. Structure A attaches to the mental spine of the mandible and protrudes the tongue
- B. Structure B arises from the hyoid bone and aids in retracting the tongue
- C. Structure C attaches to the mental spine of the mandible and pulls the hyoid bone anterosuperiorly
- D. Structure D attaches to the oblique line of the mandible and depresses the hyoid bone
- E. Structure E has two bellies and can depress the mandible and raise and steady the hyoid bone

5. Each of the statements regarding the facial vein is CORRECT EXCEPT:
- A. It connects with the cavernous sinus through the ophthalmic veins
 - B. It connects with the pterygoid venous plexus
 - C. Since it has no valves, blood can flow in either direction
 - D. It drains directly into the external jugular vein
 - E. One of its tributaries is the angular vein
6. Each statement concerning the thyroid gland or its relationships is CORRECT EXCEPT:
- A. The internal laryngeal nerve courses lateral to the lobes of this gland
 - B. The gland moves up and down during swallowing because of the ligamentous attachments to the cricoid and thyroid cartilages and trachea
 - C. The isthmus covers the anterior surface of the second and third tracheal cartilages
 - D. The superior thyroid artery supplies the superior and anterior aspects of the gland
 - E. In part of its course the external laryngeal nerve is closely related to the superior thyroid artery
7. Each statement regarding the scalp, skull and cranial cavity is CORRECT EXCEPT:
- A. The vertebral arteries enter the skull via the foramen magnum
 - B. The superior petrosal sinus is the direct venous communication between the cavernous sinus and the internal jugular vein
 - C. Arachnoid granulations are important for removing cerebrospinal fluid (CSF) from the subarachnoid space
 - D. The lesser occipital nerve arises from the cervical plexus and courses in the second layer of the scalp
 - E. From the inferior sagittal sinus, blood will drain into the straight sinus

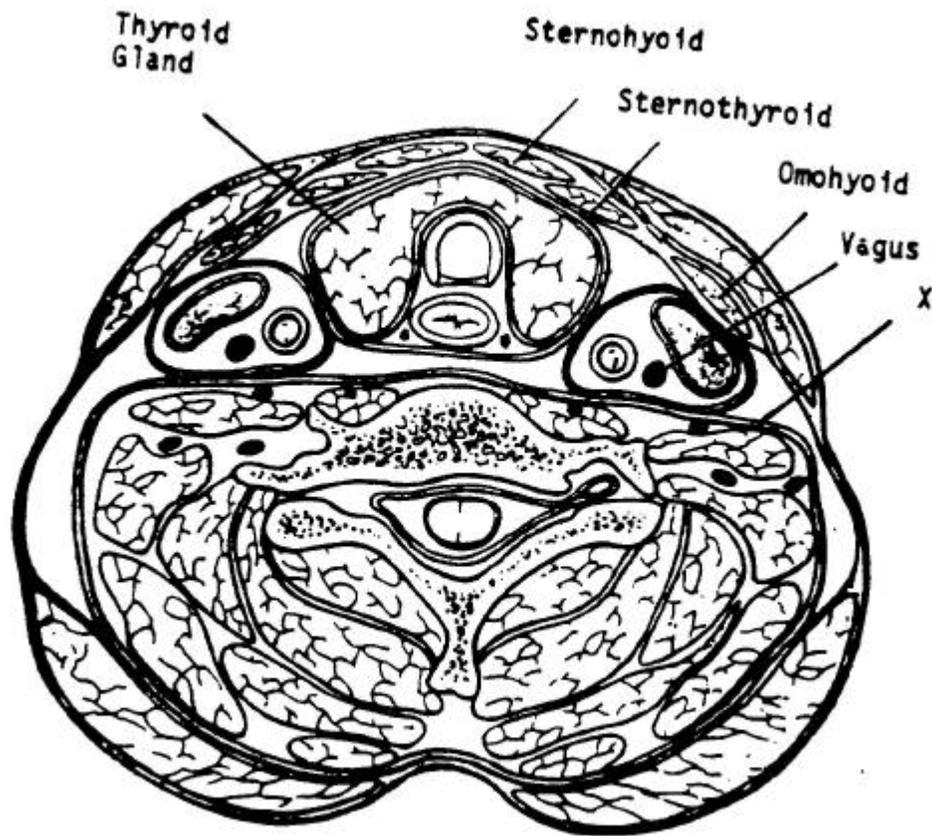
8. Regarding structures related to the nasal cavity, all are CORRECT EXCEPT:
- A. The middle concha is attached to the lateral wall
 - B. Cell bodies of postganglionic parasympathetic neurons innervating nasal mucus glands are located in the otic ganglion
 - C. Postganglionic sympathetic axons enter the nasal cavity by coursing through the sphenopalatine foramen
 - D. Drainage from an infection in the frontal sinus could enter the semilunar hiatus and then the maxillary sinus
 - E. The posterior nasal nerves contain somatic sensory fibers from the maxillary nerve
9. Which of the following structures is NOT found in the tympanic cavity (middle ear):
- A. Branches of cranial nerve IX
 - B. Tendon of the stapedius muscle
 - C. Chorda tympani nerve
 - D. Mastoid air cells
 - E. Tendon of the tensor tympani muscle
10. Which statement regarding the vagus nerve is INCORRECT:
- A. It exits the skull through the jugular foramen
 - B. The recurrent laryngeal nerve is one of its branches
 - C. It directly or indirectly supplies all the intrinsic muscles of the larynx
 - D. Its sensory branches supply the mucosa of the oropharynx
 - E. It supplies all the striated muscles of the pharynx except the stylopharyngeus

11. Which of the following is the CORRECT statement with regard to the autonomic innervation of glands in the head:
- A. Postganglionic parasympathetic fibers from a nucleus in the brainstem innervate the lacrimal gland
 - B. Stimulation of the chorda tympani produces serous secretion from the parotid gland
 - C. Postganglionic fibers arising from the otic ganglion innervate the parotid gland
 - D. Postganglionic sympathetic fibers originating in the pterygopalatine ganglion innervate the lacrimal gland
 - E. Postganglionic sympathetic axon terminals innervating the sublingual gland release acetylcholine
12. Severance (cutting) of the hypoglossal (XII) nerve at the level of the angle of the mandible would result in the paralysis of all of the following muscles on the side affected, EXCEPT:
- A. Genioglossus
 - B. Intrinsic tongue muscles
 - C. Hyoglossus
 - D. Styloglossus
 - E. Palatoglossus
13. Choose the INCORRECT match:
- A. Sensation from lips : infraorbital (V2) & mental (V3) nerves
 - B. Sensation from cheek : buccal nerve (CN VII)
 - C. Sensation from teeth : superior (V2) & inferior (V3) alveolar nerves
 - D. Sensation from hard plate : nasopalatine & greater palatine nerves (V2)
 - E. Sensation from soft palate : lesser palatine nerve (V2)

14. Choose the CORRECT match regarding the ear:
- A. Umbo: central depression of the tympanic membrane formed via contact with the incus
 - B. Vestibular (oval) window: contacted by the malleus to transmit sound waves to the inner ear
 - C. Tensor tympani muscle: tympanic membrane dampening muscle which is innervated by the mandibular division of the trigeminal nerve
 - D. Stapedius muscle: accelerates movements of the stapes to amplify sound waves
 - E. Carotid wall: contains the mastoid antrum and pyramid
15. Which statement regarding structures or relationships in the head is INCORRECT:
- A. A route for the spread of infection from the pterygopalatine fossa to the nasal cavity is through the sphenopalatine foramen.
 - B. An infection in the lower eyelid can spread to the pterygopalatine fossa by following the course of the infraorbital nerve
 - C. An abscess in the pterygopalatine fossa could drain into the nasopharynx through a pharyngeal canal
 - D. The pterygomaxillary fissure connects the middle cranial fossa with the pterygopalatine fossa
 - E. Pain from the soft palate will reach the trigeminal ganglion by coursing through the pterygopalatine ganglion
16. Each of the following structures could be damaged during removal of the palatine tonsils, EXCEPT:
- A. Adenoids (pharyngeal tonsil)
 - B. Glossopharyngeal nerve
 - C. Tonsillar arteries
 - D. External palatine vein
 - E. Palatopharyngeus muscle

17. Damage to the lingual nerve during 3rd molar (wisdom tooth) removal would be expected to result in an ipsilateral loss of all of the following EXCEPT:
- A. Parasympathetic innervation to the submandibular ganglion
 - B. Taste from the anterior 2/3 of the tongue
 - C. Pain, temperature and touch sensibility from the anterior 2/3 of the tongue
 - D. Pain, temperature and touch sensibility from the floor of the mouth
 - E. Parasympathetic innervation to the palatine glands
18. Each of the following relations in the neck is CORRECT EXCEPT:
- A. The apex of each lobe of the thyroid gland is covered by the sternothyroid muscle
 - B. The subclavian vein courses posterior to the anterior scalene muscle
 - C. The cutaneous branches of the cervical plexus emerge near the middle of the posterior border of the sternocleidomastoid muscle
 - D. The spinal accessory nerve courses superficial to the prevertebral fascia in the posterior triangle of the neck and innervates the trapezius muscle
 - E. The cervical pleura (cupola) extends into the subclavian triangle superior to the middle of the clavicle
19. Regarding the cavernous sinus and related structures, all of the statements are CORRECT EXCEPT:
- A. It drains posteriorly through the superior and inferior petrosal sinuses
 - B. It receives venous blood from the superior and inferior ophthalmic veins
 - C. The abducens nerve courses through it
 - D. The lesser petrosal nerve is contained in its medial wall
 - E. The ophthalmic and maxillary divisions of V are contained in its lateral wall

20. Regarding the internal carotid artery, all the following statements are CORRECT EXCEPT:
- A. It does not give rise to any branches in the neck
 - B. It enters the cranial cavity through the carotid canal
 - C. In the neck the internal carotid artery lies anterior to the longus capitis muscle and the sympathetic trunk
 - D. It gives rise to the central artery of the retina within the cavernous sinus
 - E. In the cranial cavity it contributes to the cerebral arterial circle (of Willis)



21. Regarding the layer marked "X" or the contents of the compartment it encloses, which statement is INCORRECT:
- A. An abscess deep to this layer can rupture into the retropharyngeal space
 - B. Laterally, the layer is continuous with the deep fascia covering the muscular floor of the posterior triangle
 - C. Within the compartment, the superior cervical sympathetic ganglion lies between the anterior and middle scalene muscles
 - D. Some muscles in this compartment flex the neck
 - E. The roots of the cervical and brachial plexuses are located in this compartment

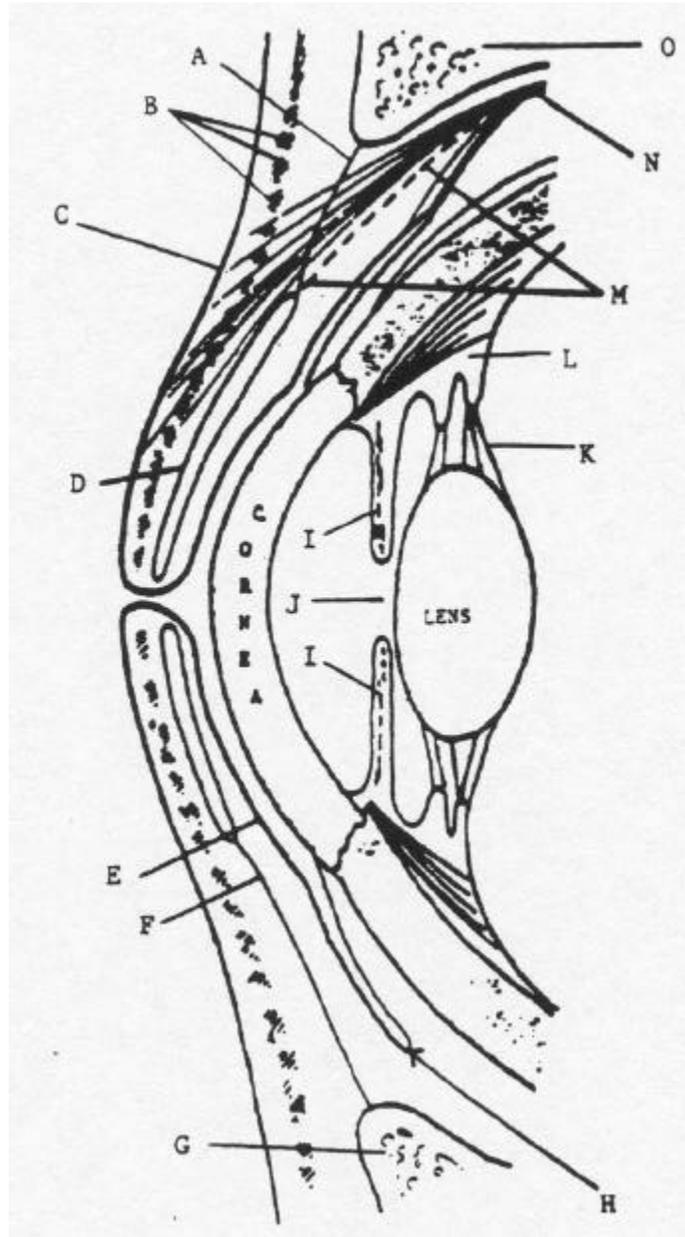
22. Which of the following statements regarding the suprahyoid muscles and related structures is INCORRECT:
- A. The mylohyoid muscle elevates the hyoid bone and the floor of the mouth and tongue during swallowing and speaking
 - B. The digastric muscle attaches to the mental spine of the mandible anteriorly and the styloid process posteriorly
 - C. In its course, the facial artery courses superior (above) and medial to the posterior belly of the digastric and stylohyoid muscles
 - D. The geniohyoid muscle is supplied by C-1 and lies between the genioglossus and the mylohyoid muscles
 - E. The mylohyoid muscle and the anterior belly of the digastric muscle are innervated by the V cranial nerve, while the stylohyoid muscle and posterior belly of the digastric muscle are innervated by VII
23. Which of the following is NOT found within the infratemporal fossa:
- A. Auriculotemporal nerve
 - B. Lingual nerve
 - C. Otic ganglion
 - D. Sphenopalatine artery
 - E. Middle meningeal artery
24. Choose the CORRECT statement:
- A. The piriform recess is the space between the epiglottis and laryngeal inlet
 - B. The salpingopharyngeus muscle is the only muscle innervated by the glossopharyngeal nerve
 - C. Soft palate movements are controlled by cranial nerves V and X
 - D. The torus tubarius is located in the oropharynx
 - E. The middle constrictor muscle is attached to thyroid & cricoid cartilages

25. Which of the following is the INCORRECT statement with regard to the autonomic innervation of the lacrimal gland:
- A. Preganglionic parasympathetics originate in a nucleus in the brainstem
 - B. Preganglionic parasympathetics course in the greater (superficial) petrosal nerve and terminate in the pterygopalatine ganglion
 - C. Postganglionic parasympathetic fibers course in the lacrimal nerve to the lacrimal gland
 - D. Stimulation of parasympathetics results in a decrease of serous secretion from the gland
 - E. Postganglionic sympathetic fibers originate in the superior cervical ganglion
26. During operations on the thyroid gland, which one of the following nerves is most vulnerable to injury when ligating the inferior thyroid artery:
- A. Internal laryngeal nerve
 - B. Ansa cervicalis
 - C. Vagus nerve
 - D. Recurrent laryngeal nerve
 - E. Sympathetic trunk
27. Regarding the parotid gland all of the following statements are CORRECT EXCEPT:
- A. The facial nerve forms a plexus in the substance of this gland
 - B. It is the largest of the three salivary glands
 - C. This gland is supplied by branches of the internal carotid artery
 - D. The lymph vessels from this gland drain into the superficial and deep cervical nodes
 - E. The parasympathetic innervation of this gland is derived from the glossopharyngeal nerve (CN IX)

28. Choose the CORRECT statement regarding head & neck lymphatics:
- A. Roughly 50% of lymph drainage of the head & neck occurs via deep cervical nodes.
 - B. Cancer of the lip spreads to the deep cervical nodes via submandibular and submental nodes.
 - C. There is no lymphatic drainage from the scalp
 - D. Jugulodigastric and jugulo-omohyoid nodes are superficial cervical nodes.
 - E. In contrast to superficial cervical nodes, deep cervical nodes cannot be palpated as a routine diagnostic tool for cancer
29. Injury to the facial nerve (VII) at the stylomastoid foramen will result in each of the following EXCEPT:
- A. Inability to close the lips on the affected side
 - B. Inability to close the eyelids on the affected side
 - C. Inability to play a wind instrument
 - D. Paralysis of the muscles of mastication on the affected side
 - E. Food and saliva dribbles out of the mouth on the affected side
30. Choose the CORRECT response regarding the auditory (pharyngotympanic) tube:
- A. It connects the oropharynx to the middle ear cavity
 - B. It is entirely cartilaginous
 - C. It contains the pharyngeal tonsils
 - D. It is opened by contractions of the levator veli and tensor veli palatini muscles
 - E. It influences sound wave transmission to the inner ear

31. Match the CORRECT muscle: function relationship
- A. Thyroarytenoid: tenses the vocal folds
 - B. Posterior cricoarytenoid: adducts the vocal folds
 - C. Cricothyroid: relaxes the vocal folds
 - D. Lateral cricoarytenoid: adducts the vocal folds
 - E. Transverse arytenoid: abducts the vocal folds
32. Each statement regarding the scalp, skull and cranial cavity is CORRECT EXCEPT:
- A. Parietal emissary veins connect scalp veins with the superior sagittal sinus
 - B. Pain from a scalp abscess just superior and medial to the eyebrow will be transmitted by the auriculotemporal nerve
 - C. The blood supply to the scalp is derived from the external and internal carotid arteries
 - D. Diploic veins receive venous blood from the scalp as well as from the bones of the skull
 - E. The cavernous sinus is located lateral to the body of the sphenoid bone

The diagram below represents a sagittal section through the orbit and eyeball. Question 33 pertains to the structures labelled in the accompanying illustration.



33. Destruction of the ipsilateral superior cervical ganglion will result in the paralysis of which eyelid related structure?

MATCHING ITEMS

In each of the following groups there are two numbered lists. Mark on the answer sheet in the line corresponding to each question number in the lower list (34-38) the letter of the related item of the upper list.

DIRECTIONS: Choose the appropriate structures (A-L below) that are most closely associated with the statements numbered 34-35.

- A. Ethmoid
- B. Frontal
- C. Lacrimal
- D. Mandible
- E. Maxilla
- F. Nasal
- G. Occipital
- H. Palatine
- I. Parietal
- J. Sphenoid
- K. Temporal
- L. Zygomatic

- 34. The pterion is the area of junction of the frontal, temporal, parietal and this bone
- 35. The carotid canal is located in this bone

DIRECTIONS:

Choose the appropriate structures (A-L below) that are most closely associated with the statements numbered 36-38.

- A. Abducens nerve
- B. Facial nerve
- C. Glossopharyngeal nerve
- D. Hypoglossal nerve
- E. Oculomotor nerve
- F. Olfactory nerve
- G. Optic nerve
- H. Spinal accessory nerve
- I. Trigeminal nerve
- J. Trochlear nerve
- K. Vagus nerve
- L. Vestibulo-cochlear nerve

- 36. The preganglionic signal for nasal mucus gland secretion travels with this nerve
- 37. A drooping upper eyelid could suggest damage to this nerve
- 38. Sensory innervation of the external ear involves B, C, K, and this nerve.

39. Choose the CORRECT statement regarding the testing of eye movements:
- A. The primary depressor of the eye is the inferior oblique muscle when the eye is in the abducted position
 - B. The primary elevator of the eye is the lateral rectus muscle when the eye is in the adducted position
 - C. The primary depressor of the eye is the superior oblique muscle when the eye is in the adducted position
 - D. The primary elevator of the eye is the inferior rectus muscle when the eye is in the abducted position
 - E. The primary elevator of the eye is the superior rectus muscle when the eye is in the adducted position

40. Choose the INCORRECT muscle/function relationship:

- A. Masseter -- Elevates mandible
- B. Lateral Pterygoids -- Acting together they protrude the mandible
- C. Medial Pterygoid -- Acting alone, it protrudes the side of the jaw thus moving the chin to the opposite side
- D. Temporalis -- Depresses mandible
- E. Masseter -- Protrudes and retrudes (retracts) the mandible

41. Regarding relationships in the head and neck all are CORRECT EXCEPT:
- A. The ethmoid sinus is bordered medially by the nasal cavity, superiorly by the anterior cranial fossa and laterally by the orbit and upper portion of the maxillary sinus
 - B. In the submandibular triangle, the hypoglossal nerve courses superior (or deep) to the mylohyoid muscle and the lingual artery courses superior (or deep) to the the hyoglossus muscle
 - C. The internal laryngeal nerve, a direct branch of the superior laryngeal nerve, penetrates the cricothyroid membrane and provides pain and touch sensibility to the mucosa inferior to the vocal folds
 - D. The stellate (cervicothoracic) ganglion usually lies anterior to the transverse process of the seventh cervical vertebra, just superior to the neck of the first rib and posterior to the origin of the vertebral artery
 - E. The boundaries of the carotid triangle are the superior belly of the omohyoid muscle, the posterior belly of the digastric muscle and the anterior border of the sternocleidomastoid muscle
42. While dining at a restaurant, your companion exhibits a terrified expression, motions that he/she cannot breathe, and then loses consciousness. It is probable that your companion:
- A. Has a piece of food lodged in the piriform recess
 - B. Should receive mouth-to-mouth recussitation
 - C. Has a laryngeal spasm which requires a Heimlich maneuver
 - D. Has an obstructed rima glottidis
 - E. Sat too close to you during your consumption of a jumbo garlic burrito