GROSS ANATOMY EXAMINATION
May 15, 2000

For the following questions, indicate the letter that corresponds to the SINGLE MOST APPROPRIATE ANSWER

1. Pain associated with an infection limited to the middle ear cavity results from impulses carried along the
   A. chorda tympani nerve.
   B. great auricular nerve.
   C. vagus nerve.
   D. glossopharyngeal nerve.
   E. mandibular division of the trigeminal nerve.

2. All of the following structures are usually supplied by branches of the maxillary artery EXCEPT the
   A. masseter muscle.
   B. cranial dura mater.
   C. temporomandibular joint.
   D. lower teeth.
   E. scalp.

3. An otolaryngologist examined the tympanic membrane of a patient with a middle ear infection. She recalled that the tympanic membrane
   A. is crossed on its lateral surface by the chorda tympani nerve.
   B. is attached to the malleus.
   C. is a partition between the external and internal auditory meatuses.
   D. forms most of the medial wall of the tympanic cavity.
   E. directly transmits vibrations to the round window.

4. While removing a schwannoma of the vagus nerve, as it exits the skull at the jugular foramen, the superior cervical ganglion was inadvertently destroyed. This could result in
   A. a dilated pupil in normal light.
   B. moderate drooping of the eyelid.
   C. decrease in the heart rate.
   D. increased sweating of the face.
   E. decreased blood flow of the superficial facial arteries.

5. All of the following statements concerning the middle ear cavity are correct EXCEPT that it
   A. contains the stapedius muscle that is innervated by the facial nerve.
   B. communicates with the nasopharynx via the auditory tube.
   C. contains a tympanic plexus that includes fibers from the vagus nerve.
   D. is separated from the middle cranial fossa by the tegmen tympani.
   E. contains a bulge on its medial wall that is caused by the basal turn of the cochlea.
6. A 27-year-old man was struck on the side of his head with a hockey stick, fracturing the ramus of his mandible. On resecting fragments of the ramus, the plastic surgeon noted blood oozing from the pterygoid plexus, just medial to the bone fragments. The surgeon was concerned about the development of infection because he knew that the plexus had direct connections with all of the following structures EXCEPT the
   A. facial vein.
   B. cavernous sinus.
   C. inferior ophthalmic vein.
   D. sigmoid sinus.

7. A bullet that passes through the posterior belly of the digastric muscle would damage all of the following structures EXCEPT the
   A. superior thyroid artery.
   B. hypoglossal nerve.
   C. internal jugular vein.
   D. external carotid artery.
   E. superior root of the ansa cervicalis.

8. An oral surgeon corrected the malocclusion of a patient by repositioning the articular disk of the right temporomandibular joint. He knew that a muscle which attaches to the disk is the
   A. medial pterygoid.
   B. temporalis.
   C. masseter.
   D. buccinator.
   E. lateral pterygoid.

9. "Shingles" is a painful skin disorder that results from a viral infection in the cell bodies of sensory neurons. In a patient with skin blisters over the lower jaw, anterior to the external ear and temporal region, the viral infection is located in the
   A. otic ganglion.
   B. trigeminal ganglion.
   C. ciliary ganglion.
   D. superior cervical ganglion.
   E. geniculate ganglion.

10. A thyroidectomy is performed to remove a tumor. During the procedure, the surgeon remembered that all of the following statements regarding the thyroid gland are correct EXCEPT that
   A. it is enveloped by pretracheal fascia.
   B. it is located inferior to the thyroid cartilage.
   C. the isthmus crosses the 2nd and 3rd tracheal cartilages.
   D. the left and right lobes are posterior to the sternothyroid muscle.
   E. it is drained by veins that empty into the external jugular vein.
11. A 35-year-old woman complained to her physician that her left hand felt colder than her right. The doctor suspected that the left subclavian artery may be compressed. The MOST LIKELY place where this artery could be compressed is
   A. against the clavicle lateral to the sternocleidomastoid muscle.
   B. in the suprasternal notch.
   C. as it comes off the brachiocephalic artery.
   D. as it travels posterior to the anterior scalene muscle.
   E. just above the sternoclavicular joint.

12. Following an injection of a local anesthetic agent around the mandibular division of the trigeminal nerve (CN V3) as it exits the skull, all of the following would occur, EXCEPT
   A. loss of sensation to the lower teeth and skin covering the mandible and chin.
   B. paralysis of the anterior belly of the digastric muscle.
   C. paralysis of the lateral and medial pterygoid muscles.
   D. paralysis of the temporalis muscle.
   E. paralysis of the buccinator muscle.

13. During exploratory surgery of the posterior triangle of the neck, a surgeon is aware that all of the following relationships regarding this triangle are correct EXCEPT that
   A. it contains the accessory nerve
   B. it is bound anteriorly by the posterior border of the sternocleidomastoid muscle.
   C. its base is formed by the middle 1/3 of the clavicle.
   D. it contains the ansa cervicalis.
   E. it contains the lesser occipital nerve.

14. An aneurysm at the bifurcation of the common carotid artery could compress and damage adjacent nerves. Which of the following symptoms is LEAST likely to result?
   A. Weakness of the sternohyoid muscle
   B. Loss of sensation above the vocal cords
   C. Paralysis of the cricothyroid muscle
   D. Hoarseness
   E. Loss of sensation of the skin just anterior to the auricle

15. An oral surgeon, while correcting an uneven temporomandibular joint, is especially careful to avoid damage to the auriculotemporal nerve. He is aware that this nerve
   A. supplies the temporalis muscle.
   B. travels with the occipital artery.
   C. is a branch of the maxillary nerve.
   D. has roots which surround the inferior alveolar artery.
   E. carries parasympathetic fibers to the parotid gland.
16. In preparation for a thyroidectomy, a resident recalls that all of the following statements about the superior thyroid artery are correct EXCEPT that it
   A. is a branch of the external carotid artery.
   B. travels with the recurrent laryngeal nerve for part of its course.
   C. has anastomoses with the opposite superior thyroid artery at the isthmus.
   D. could receive blood from the inferior thyroid artery following occlusion of the common carotid artery.
   E. gives off a superior laryngeal branch.

17. While preparing for surgery in the infratemporal fossa, you remind yourself that the chorda tympani nerve
   A. has fibers that synapse in the otic ganglion.
   B. is a branch of the glossopharyngeal nerve.
   C. carries taste fibers to the lingual nerve.
   D. exits the cranial cavity through the stylomastoid foramen.
   E. travels for part of its course in the middle cranial fossa.

18. During resection of the trigeminal ganglion for relief from trigeminal neuralgia the motor root of the trigeminal nerve was accidently lesioned. A muscle expected to be paralyzed is the
   A. sternohyoid.
   B. stapedius.
   C. tensor tympani.
   D. posterior belly of the diagastric.
   E. buccinator.

19. The otic vesicle develops into all the following structures EXCEPT the
   A. cochlear ducts.
   B. semicircular canals.
   C. endolymphatic sac.
   D. utricle.
   E. tubotympanic recess.

20. Select the lettered part of the figure below that best indicates the structures that gives rise to the external auditory meatus.
   A. A
   B. B
   C. C
   D. D
   E. E
Answers: 1d2e3b4b5c6d7a8e9b10e11d12e13d14e15e16b17c18c19e20c