GROSS ANATOMY EXAMINATION

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

1. A 9-year-old boy was hospitalized with inflamed palatine tonsils. During removal of the tonsils, the surgeon attempted to avoid injury to structures in the tonsillar bed which include all of the following EXCEPT the
   A. hypoglossal nerve.
   B. superior pharyngeal constrictor muscle.
   C. styloglossus muscle.
   D. branches of the facial artery.
   E. glossopharyngeal nerve.

2. A patient with a severe pharyngeal infection would initially have
   A. enlarged submental nodes.
   B. enlarged submandibular nodes.
   C. an enlarged jugulodigastric node.
   D. an enlarged juguloomohyoid node.
   E. enlarged parotid (preauricular) nodes.

3. A fracture originating in the mastoid process that passes through the stylomastoid foramen may result in paralysis of all of the following EXCEPT the
   A. frontalis muscle.
   B. posterior belly of the digastric muscle.
   C. temporalis muscle.
   D. buccinator muscle.
   E. orbicularis oculi muscle.

4. Injury to the right hypoglossal nerve as it exits the brain stem can result in
   A. deviation of the protruded tongue to the right.
   B. inability to depress the hyoid bone on the right side.
   C. accumulation of food in the space between the teeth and the cheek on the right side.
   D. deviation of the uvula to the left.
   E. loss of taste from the anterior two-thirds of the tongue.

5. During surgery to remove the structure marked "1" in the diagram below, a surgeon encountered substantial scar tissue from previous infections. This made the procedure technically difficult. A hemorrhage occurred during the surgery that may have resulted from accidentally cutting direct branches of any of the following vessels EXCEPT the
   A. facial artery.
   B. lingual artery.
   C. vertebral artery.
   D. ascending pharyngeal artery.
   E. lesser palatine artery.
6. During an examination of the area shown in the diagram below, the structure marked "2" is called the
   A. salpingopharyngeal arch.
   B. palatopharyngeal arch.
   C. palatoglossal arch.
   D. pharyngeal tonsil.
   E. pharyngeal recess.

7. After passing through the pterygopalatine fossa, the maxillary nerve sends branches innervating many different structures. All of the following nerve/innervation matches are correct EXCEPT
   A. infraorbital nerve: skin of lateral nose.
   B. posterior superior alveolar nerve: upper posterior teeth.
   C. zygomatic nerve: parotid gland.
   D. anterior superior alveolar nerve: mucosa of maxillary sinus.

8. A child with a cleft palate was seen by an otolaryngologist. In planning a surgical procedure to repair this defect, it was considered important to properly position muscles related to normal swallowing. This would require appropriate attachment of muscles that permit the oropharynx to be closed off from the nasopharynx during swallowing. A muscle involved in this action is the
   A. palatoglossus.
   B. palatopharyngeus.
   C. levator veli palatini.
   D. stylopharyngeus.
   E. salpingopharyngeus.

9. At a crayfish boil, Keith ate too fast and a small piece of crayfish shell got caught in the piriform recess. This is an area
   A. bound medially by the thyrohyoid membrane.
   B. bound laterally by the quadrangular membrane.
   C. innervated by the internal laryngeal nerve.
   D. innervated by the external laryngeal nerve.
   E. that lies posterior to the trachea.

10. Cancerous cells from a tumor of the vestibular fold of the larynx may directly metastasize to the
    A. superficial cervical nodes.
    B. upper deep cervical nodes.
    C. lower deep cervical nodes.
    D. pretracheal nodes.
    E. preaortic nodes.
11. A periodontist made incisions in the mucous membrane medial to the mandibular teeth. He knew that there he could observe the mylohyoid muscle and that all of the following statements about the muscle are correct EXCEPT that it
   A. is innervated by a branch of the inferior alveolar nerve.
   B. forms most of the floor of the oral cavity.
   C. is derived from branchial arch mesoderm.
   D. originates from the ramus of the mandible.
   E. separates the superficial and deep parts of the submandibular gland.

12. A 85-year-old hypertensive man was brought to the emergency department with a major, possibly life-threatening, nose-bleed. The artery involved was MOST LIKELY a branch of the
   A. facial artery.
   B. maxillary artery.
   C. ophthalmic artery.
   D. ascending pharyngeal artery.
   E. descending palatine artery.

13. The pterygopalatine ganglion receives input from
   A. preganglionic sympathetic and postganglionic parasympathetic fibers.
   B. preganglionic sympathetic, preganglionic parasympathetic and sensory fibers.
   C. postganglionic sympathetic, preganglionic parasympathetic and sensory fibers.
   D. postganglionic sympathetic, postganglionic parasympathetic and sensory fibers.
   E. the lesser and deep petrosal nerves.

14. Dr. Cotton used a laryngoscope to examine the vocal cords of a patient complaining of a persistent sore throat. He recalled that
   A. the vocal ligament forms the free lower edge of the conus elasticus.
   B. longer vocal cords will produce a voice with a higher pitch.
   C. the vocal ligaments stretch between the vocal processes of the arytenoids and the cricoid cartilages.
   D. the rima glottidis is widened by the action of the posterior cricoarytenoideus muscles.
   E. during quiet respiration the vocal cords are taut.

15. Following an injection of a local anesthetic agent around the mandibular division of the trigeminal nerve (CN V) as it exits the skull, all of the following would occur EXCEPT
   A. numbness of the lower teeth.
   B. temporary paralysis of the levator veli palatini.
   C. temporary paralysis of the lateral pterygoid muscle.
   D. numbness paralysis of the anterior two-thirds of the tongue.
   E. temporary paralysis of the tensor tympani muscle.
16. A 30-year-old man broke his nose during a boxing match, damaging some of the nerve supply to his nasal cavity. Nerve branches providing supply to the nasal cavity include all of the following EXCEPT the
   A. anterior ethmoidal nerve.
   B. olfactory nerve.
   C. nasoalatine nerve.
   D. posterior superior alveolar nerve.

17. In a patient with an aneurysm of the aortic arch, compression of the left recurrent laryngeal nerve could result in
   A. deviation of the uvula to the right side.
   B. paralysis of the left cricothyroid muscle.
   C. loss of sensory supply to the mucosa of the vestibule of the larynx.
   D. inability to abduct the vocal fold on the side of the lesion.
   E. complete closure of the rima glottidis.

18. While preparing for surgery in the oral cavity, you remind yourself that the chorda tympani nerve
   A. has fibers that synapse in the pterygopalatine ganglion.
   B. is a branch of the glossopharyngeal nerve.
   C. joins the deep petrosal nerve.
   D. carries taste fibers from the anterior two-thirds of the tongue.
   E. exits the cranial cavity through the stylomastoid foramen.

19. A 22-year-old army recruit reported to sickbay as a consequence of severely impacted mandibular wisdom teeth. The oral surgeon was aware of the adjacent portions of the submandibular gland and its duct and knew that all of the following statements concerning the submandibular gland are correct EXCEPT that it
   A. receives postganglionic sympathetic fibers from the superior cervical ganglion.
   B. receives preganglionic parasympathetic fibers from the chorda tympani nerve.
   C. receives postganglionic sympathetic fibers that travel along branches of the external carotid artery.
   D. is penetrated by and completely surrounds the lingual artery.
   E. has a duct that empties into the sublingual region near the frenulum of the tongue.

20. A 2-year-old was playing outside with rocks and decided to put one up her nose. This affected the drainage of the inferior nasal meatus which receives direct drainage from the
   A. sphenoidal sinus.
   B. posterior ethmoidal air cells.
   C. nasolacrimal duct.
   D. middle ethmoidal air cells.
   E. maxillary sinus.
21. A patient has symptoms limited to loss of taste from the tongue and decreased salivary gland secretion. This could be due to a lesion of the
A. lingual nerve just distal to its junction with the chorda tympani.
B. facial nerve in the facial canal immediately proximal to the branching of the chorda tympani.
C. chorda tympani as it exits the petrotympanic fissure.
D. facial nerve in the internal auditory meatus proximal to the geniculate ganglion.
E. lingual nerve just distal to the submandibular ganglion.

22. When swallowing a piece of beef tenderloin, the size of the laryngeal inlet, vestibule and rima glottidis must be modified to prevent food from entering the respiratory passageway. All of the following muscles participate in this action EXCEPT the
A. cricothyroid.
B. transverse arytenoid.
C. oblique arytenoid.
D. thyroarytenoid.
E. aryepiglotticus.

23. A 72-year-old man had a calculus in his submandibular duct. While removing the calculus, the oral surgeon knew that the hyoglossus muscle was just medial to the duct and that all of the following statements concerning the muscle are correct EXCEPT that
A. it is an extrinsic muscle of the tongue.
B. the hypoglossal nerve is located on its lateral surface.
C. it is derived from branchial arch mesoderm.
D. the lingual nerve is located on its lateral surface.
E. it is innervated by the hypoglossal nerve.

24. A patient came to your office with a complaint of "food going down the wrong way". An imaging study that involved swallowing an opaque dye was done, revealing severe weakness of the pharyngeal constrictor muscles. This dysfunction could be the result of an injury to a branch of the
A. glossopharyngeal nerve.
B. vagus nerve.
C. facial nerve.
D. hypoglossal nerve.
E. sympathetic chain.

25. A 53-year-old, overweight woman was having difficulty sleeping and snored quite loudly. To correct these problems, it was decided by her surgeon to create a bifid uvula. During the surgical procedure, the surgeon recalled that some muscles of the soft palate are innervated by nerve fibers which travel in the
A. glossopharyngeal nerve.
B. lingual nerve.
C. hypoglossal nerve.
D. vagus nerve.
E. facial nerve.
26. A woman with a large schwannoma compressing the nerve of the pterygoid canal would have all the following symptoms EXCEPT
   A. decreased secretion of the nasal glands.
   B. decreased secretion of the mucosal glands of the palate.
   C. increased secretion of the parotid gland.
   D. a dry eye.
   E. vasodilation of the arteries of the nasal walls.

Answers:
1a2c3c4a5c6b7c8e9c10b11d12b13c14d15b16d17d18d19d20c21c22a23c24b25d26c