GROSS ANATOMY EXAMINATION
Monday, April 24, 2000

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

1. In a fight a man was hit hard just below his orbit. He has some loss of sensation to his upper lip due to injury to the
   A. auriculotemporal nerve.
   B. supraorbital nerve.
   C. external nasal nerve.
   D. mental nerve.
   E. infraorbital nerve.

2. Drooping of the upper eyelid and constriction of the pupil could result from damage to all of the following structures EXCEPT the
   A. superior cervical ganglion.
   B. upper thoracic white rami communicantes.
   C. cervical sympathetic trunk.
   D. cervical gray rami communicantes.
   E. internal carotid nerve plexus.

3. Thrombosis (blood clot) of the cavernous sinus usually results from infections in the orbit, nasal sinuses or superior part of the face. All of the following structures are associated with the walls or the cavity of this sinus EXCEPT for the
   A. internal carotid artery.
   B. oculomotor nerve.
   C. sympathetic nerve plexus.
   D. mandibular branch of the trigeminal nerve.
   E. abducens nerve.

4. An autonomic pathway from the CNS to the lacrimal gland includes all of the following structures EXCEPT the
   A. ciliary ganglion.
   B. greater petrosal nerve.
   C. pterygopalatine ganglion.
   D. lacrimal nerve.
   E. superior cervical ganglion.
5. The orbicularis oculi is an important muscle of facial expression. All of the following statements pertain to it EXCEPT that it
   A. shuts the eyes tightly.
   B. has a portion that compresses the lacrimal sac.
   C. is innervated by the supraorbital nerve.
   D. develops from mesenchyme of the second branchial arch.
   E. prevents the cornea from drying out by blinking.

6. 45-year-old man lost consciousness after receiving a severe blow to the head. He was brought to the emergency department and diagnosed with an epidural hematoma. This was probably caused by the rupture of the
   A. internal carotid artery.
   B. vertebral artery.
   C. middle meningeal artery.
   D. superficial cerebral vein.
   E. transverse sinus.

7. During your neurology rotation, you are asked a series of questions about the sixth cranial nerve. You did well because you knew that the sixth cranial nerve
   A. has a parasympathetic component.
   B. travels in the lateral wall of the cavernous sinus.
   C. if injured bilaterally, can result in "crossed eyes."
   D. enters the orbit outside of the common tendinous ring.
   E. innervates a muscle that adducts the eyeball.

8. A cut just anterior to the ear could sever an artery and a nerve. Which of the following combinations may have been severed?
   A. A branch of the internal carotid artery and a branch of the maxillary division of CNV
   B. A branch of the internal carotid artery and a branch of the mandibular division of CNV
   C. A branch of the external carotid artery and a branch of the ophthalmic division of CNV
   D. A branch of the external carotid artery and a branch of the maxillary division of CNV
   E. A branch of the external carotid artery and a branch of the mandibular division of CNV
9. All of the following statements regarding components of the autonomic nervous system in the orbit are correct EXCEPT that
   A. the ciliary ganglion contains postganglionic cell bodies.
   B. the short ciliary nerves contain both postganglionic sympathetic and parasympathetic fibers.
   C. the lacrimal nerve contains postganglionic parasympathetic fibers.
   D. sympathetic fibers travel to the orbit on blood vessels.
   E. postganglionic parasympathetic fibers from the ciliary ganglion cause pupillary dilation.

10. A tumor compresses the facial nerve as it exits the cranium. This nerve
    A. innervates the skin of the temporal area.
    B. opens the eyelid.
    C. supplies motor fibers to the buccinator muscle.
    D. supplies parasympathetic fibers to the pupillary constrictor.
    E. goes through the foramen spinosum.

11. 47-year-old woman visits your office and complains that she has double vision (diplopia). During an examination of her eyes, you ask her to look in various directions to test the integrity of the eye muscles. Select from the options below the location of the pupil (the direction you would ask her to look) if you were interested in testing for a functional right superior rectus muscle.
    A. A
    B. B
    C. C
    D. D
    E. E

12. A 53-year-old man has lost vision in his right eye. An MRI reveals a tumor, confined to the optic canal, compressing the optic nerve. What other structure(s) is (are) also most likely being compressed?
    A. Cranial nerves III and IV
    B. Cranial nerve VI
    C. Lacrimal and frontal nerves
    D. Ophthalmic artery
    E. Ophthalmic veins

13. Your patient presents with an advanced stage of squamous cell carcinoma of the midline area of the lower lip. Which of the following groups of lymph nodes will most likely be initially enlarged?
    A. Submandibular
    B. Submental
    C. Parotid
    D. Posterior auricular/retroauricular
    E. Superficial cervical
14. Responding to a domestic violence call, the police officer found a man bleeding profusely from a wound just above the hairline caused by being hit by a broken bottle. Which layer of the scalp contains the blood vessels that are the source of the bleeding?
   A. Skin
   B. Pericranium
   C. Aponeurosis
   D. Loose connective tissue
   E. Dense connective tissue

15. A 20-year-old college baseball player was rushed to the emergency department after being struck on the lateral side of his head during practice. This blow resulted in damage to structures in his middle cranial fossa. As a first year medical student you recalled that all of the following are located in this fossa EXCEPT for the
   A. internal acoustic meatus.
   B. greater wing of the sphenoid bone.
   C. superior orbital fissure.
   D. foramen spinosum.
   E. foramen rotundum.

16. A 32-year-old male received a gunshot wound to the face (in the drawing below) as the result of a drive-by shooting. In the emergency department, the resident on duty considered structures to avoid during the removal of the bullet, which was lodged in the mandible. All of the following structures are likely to be located along the path of the bullet EXCEPT
   A. the parotid gland.
   B. the masseter muscle.
   C. branches of the facial nerve.
   D. the facial artery.
   E. cutaneous branches of the trigeminal nerve.

Answers: 1e2d3d4a5c6c7c8e9e10c11a12d13b14e15a16d