

WESTERN UNIVERSITY OF HEALTH SCIENCES
COLLEGE OF OSTEOPATHIC MEDICINE OF THE PACIFIC

GROSS ANATOMY FINAL EXAM

January 30, 1998

#1

Choose the **ONE BEST** answer and darken the appropriate box on the Scantron form. There are **53 questions** on this exam.

1. The motor nerves to the auricular MM are in which of the five scalp layers?

- A. skin
 B. connective tissue (subcutaneous) layer
 C. aponeurotic
 D. loose areolar connective tissue
 E. periosteum

2. All of the following structures are associated with the nasopharynx EXCEPT

- A. piriform recess.
 B. torus tubarius.
 C. torus levatorius.
 D. tubal tonsils.
 E. choanae.

3. Which of the following dural venous sinuses receives an emissary V from the nasal cavity?

- A. superior sagittal
 B. straight
 C. transverse
 D. sigmoid
 E. occipital

4. Which of the following nerves lies within the cavernous sinus?

- A. trochlear
B. ophthalmic
C. maxillary
 D. abducens
E. mandibular

5. All of the following have direct connections with the cavernous sinus EXCEPT.

- A. superior ophthalmic V.
- B. sphenoparietal sinus. \top
- C. superior petrosal sinus.
- D. inferior petrosal sinus.
- E. transverse sinus.

6. The pharyngobasilar fascia is derived from the

- A. periosteum.
- B. buccopharyngeal fascia.
- C. fascia of the circular muscles of the pharynx.
- D. longitudinal muscles of the pharynx.
- E. submucosa of the pharynx.

7. All of the following are in the jugular fossa EXCEPT

- A. hypoglossal N. 12
- B. glossopharyngeal N. 9
- C. vagus N. 10
- D. accessory N. 11
- E. jugular bulb.

Match the muscles in column A with the nerves in column B that supply them. Nerves may be used once, more than once, or not at all.

Column A	Column B
<u>C</u> 8. superior pharyngeal constrictor	A. facial
<u>D</u> 9. stylopharyngeus	B. mandibular
<u>E</u> 10. geniohyoid	<input checked="" type="checkbox"/> C. vagus
<u>B</u> 11. anterior belly digastric 5	<input checked="" type="checkbox"/> D. glossopharyngeal
<u>A</u> 12. posterior belly digastric 7	<input checked="" type="checkbox"/> E. cervical nerve (C1)

13. The nasopalatine nerve exits the pterygopalatine fossa through which pathway?

- A. foramen rotundum
- B. pharyngeal canal
- C. sphenopalatine foramen
- D. incisive canal
- E. pterygomaxillary fissure

14. All of the following arteries are branches from the pterygopalatine part of the maxillary A EXCEPT

Pterygoid Mandibular
Masticate

- A. sphenopalatine. T
 - B. middle meningeal.
 - C. descending palatine. T
 - D. pharyngeal. T
 - E. infraorbital.
15. The major blood supply to the palatine tonsil is from tonsillar branches of which artery?
- A. facial
 - B. ascending pharyngeal
 - C. lingual
 - D. ascending palatine
 - E. descending palatine
16. All of the following are lateral to the hyoglossus M EXCEPT
- A. deep part of submandibular gland.
 - B. submandibular duct.
 - C. lingual A.
 - D. lingual N.
 - E. hypoglossal N.
17. All of the following are classified as muscles of mastication EXCEPT
- A. buccinator M. *Facial*
 - B. medial pterygoid M. T
 - C. lateral pterygoid M. T
 - D. masseter M. T
 - E. ~~lateral pterygoid~~ T
Temporalis
18. The infratemporal fossa contains all of the following EXCEPT
- A. lingual N. T
 - B. lateral pterygoid M. T
 - C. tensor velli palatini.
 - D. pterygoid plexus of VV. ✓
 - E. maxillary A. ✓

Match the muscles in column A with main functions listed in column B, which may be used once, more than once, or not at all.

Column A	Column B
<u>C</u> 19. lateral pterygoid	A. retract tongue
<u>B</u> 20. masseter	B. elevate mandible
<u>B</u> 21. temporalis	C. depress mandible
<u>D</u> 22. genioglossus	D. protrude tongue
<u>A</u> 23. styloglossus	E. elevate larynx

Match the nerves in column A with appropriate components listed in column B. Each component may be used once, more than once, or not at all.

Column A	Column B
<u>D</u> 24. lesser petrosal N	A. preganglionic parasympathetic and postganglionic sympathetic
<u>A</u> 25. N. of pterygoid canal	B. postganglionic sympathetic
<u>C</u> 26. greater palatine N ^{post-ganglionic}	C. only general sense
<u>B</u> 27. deep petrosal N	D. preganglionic parasympathetic
<u>E</u> 28. short ciliary N	E. postganglionic parasympathetic, postganglionic sympathetic, and general sense

Match structures in column A with the appropriate nerves in column B, which may be used once, more than once, or not at all.

Column A	Column B
<u>D</u> 29. lateral rectus M	A. oculomotor 3
<u>E</u> 30. superior oblique M ₄	B. ophthalmic V ₁
<u>B</u> 31. skin of upper eyelid	C. maxillary V ₂
<u>B</u> 32. conjunctiva of cornea	D. abducens VI
<u>A</u> 33. inferior oblique M	E. trochlear IV

34. All of the following structures derive in association with branchial arch I EXCEPT

- A. sphenomandibular lig. T
- B. malleus bone. T
- C. muscles of mastication. T
- D. trigeminal nerve. T
- E. hyoid bone.**

V₁ II - facial
 V₂
 V₃

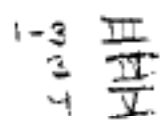
35. The bregma (junction of sagittal and coronal sutures) develops out of a fetal skull region known as the

- A. anteriolateral fontanelle.
- B. anterior fontanelle.**
- C. posteriolateral fontanelle.
- D. posterior fontanelle.
- E. squamosal suture.

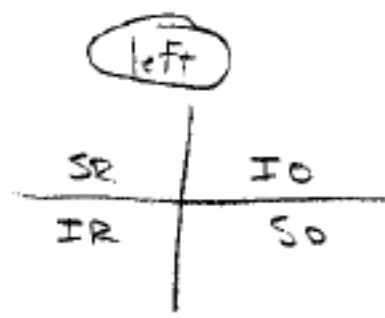
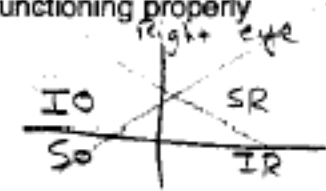
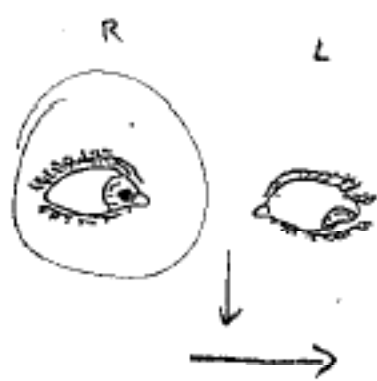


36. Surrounding the developing eye, mesoderm migrates to become muscle and nerves. Those muscles bringing in CN III arise from

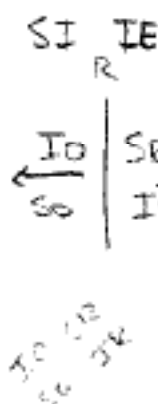
- A. somites 1-4.
- B. somitomere # 4.**
- C. somitomeres #1 & 2.
- D. somitomere #6.
- E. somitomere #7.



37. When asked to gaze downward and to the left, your patient has the following appearance. Which of the extraocular muscles is **NOT** functioning properly



- ~~A. left inferior oblique~~
- ~~B. left superior oblique~~
- ~~C. right inferior rectus~~
- ~~D. left lateral rectus~~
- E. right superior oblique**



38. Which of the following statements about the extraocular muscles is **INCORRECT**?

- A. The inferior oblique muscles course between the anterior inferior corner of the orbit and the posterior inferior surface of the eyeball. **T**
- B. From the anatomical position, the inferior rectus muscle adducts, depresses and extorts gaze. **T**
- C. The inferior oblique muscle is most effective in elevation of gaze when gaze is abducted. **F**
- D. When the head is tilted to the right, the superior rectus and superior oblique muscles of the right eye will be activated to restore true vertical in the visual field.
- E. The superior oblique muscle acts as if its muscle fibers originate from the area of the trochlea.

39. Which of the following statements is **INCORRECT**?

- A. The auditory tube opens into the anterior wall of the middle ear. **T**
- B. The M. tensor tympani inserts on the manubrium of the malleus. **T**
- C. The facial nerve courses through the medial and posterior walls of the middle ear.
- D. The footplate of the stapes fits into the fenestra vestibuli (oval window). **T**
- E. The lining of the middle ear, including the inner surface of the tympanic membrane is innervated by the facial nerve. **??**

40. Which of the following statements is **INCORRECT**?

- A. Contraction of the tensor tympani muscle increases acuity by permitting much softer sounds to create vibration of the tympanum and malleus.
- B. The stapedius muscle is innervated by the facial nerve. **T**
- C. The lesser petrosal nerve forms in the tympanic plexus and exits through the tegmen tympani. **NO**
- D. Normally, the tympanic membrane is tilted superolateral to the inferomedial and deeply concave (when viewed with an otoscope) in the region of the umbo.
- E. The bulb of the internal jugular vein lies beneath the floor of the middle ear cavity.

41. Regarding the framework of the larynx, all of the following are true **EXCEPT**:

- A. The inferior horns of the thyroid cartilage are associated with a typical synovial joint. **T**
- B. The epiglottic cartilage is different type than that of the other cartilages. **T Elastic**
- C. The muscular process is a lateral projection of the arytenoid cartilage. **T**
- D. The cricoarytenoid joints lie on the superior margin of the anterior arch of the cricoid cartilage.
- E. The vocal ligament attaches near the midline of the thyroid cartilage.

~~43~~ Which of the following muscle/function pairs is INCORRECTLY matched?

- A. Transverse arytenoid muscle / vocal cord adduction T
- B. Lateral cricoarytenoid muscle / vocal cord adduction T
- C. Cricothyroid muscle / vocal cord tension T
- D. Superior fibers of posterior cricoarytenoid muscle / vocal cord abduction
- E. Inferior fibers of posterior cricoarytenoid muscle / vocal cord adduction AB

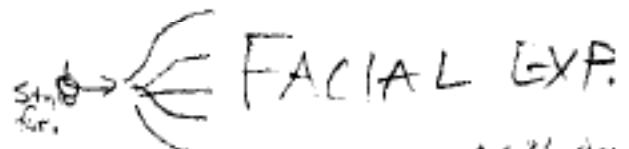
~~43~~ A thyroid cancer surgery patient postoperatively has developed voice changes and can speak only hoarsely at low pitches. Which of the following nerves was most likely damaged?

- A. Vagus nerve superior to origin of superior laryngeal nerve
- B. Vagus nerve inferior to origin of superior laryngeal nerve
- ~~C. Recurrent laryngeal nerve between trachea and esophagus~~
- ~~D. External laryngeal nerve inferior to origin of internal laryngeal nerve~~
- ~~E. Inferior laryngeal nerve (Recurrent)~~

cricothyroid damage
 Rec. larynx = all or nothing
 sup not damaged

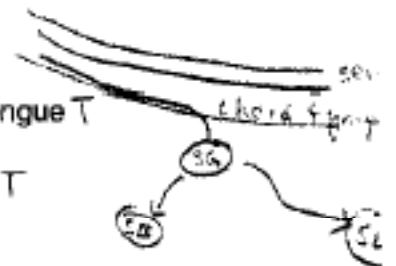
44. A lesion to the facial nerve at the stylomastoid foramen would lead to which of the following signs and symptoms?

- A. Decreased lacrimation No
- B. Decreased salivation in the mouth
- C. Paralysis of the stapedius muscle No
- D. Inability to close the eye T orb. oculi
- E. All of the above



45. A lesion to the lingual nerve immediately distal to its junction with the chorda tympani will lead to which of the following deficits?

- A. Loss of taste from the anterior 2/3rds of the tongue T
- B. Loss of general sensation from the anterior 2/3rds of the tongue T
- C. Loss of parasympathetic input to the sublingual gland T
- D. Loss of parasympathetic input to the submandibular gland T
- E. All of the above



46. Concerning the parasympathetic fibers from cranial nerve 9, which statement is FALSE?

- A. The lesser petrosal nerve travels on the floor of the cranial cavity and exits the skull through the foramen lacerum
- B. The preganglionic fibers synapse in the otic ganglion. T
- C. The postganglionic fibers travel on the auriculotemporal nerve T
- D. The auriculotemporal nerve splits to go around the middle meningeal artery T
- E. The postganglionic fibers innervate the parotid gland T

6th to pharyngeal

47. The parasympathetic fibers traveling to various glands and smooth muscle travel branches of cranial nerve V. Which branches of cranial nerve V carry preganglionic parasympathetic fibers?

- A. Short ciliary nerves *post*
- B. Lingual nerve *pre*
- C. Auriculotemporal nerve *post*
- D. Palatine nerves
- E. Zygomaticotemporal nerve
- ~~D. Lacrimal nerve~~

48. Which of the following structures is NOT found in the parotid gland?

- ~~T~~ A. Retromandibular vein *T*
- ~~T~~ B. External carotid artery
- ~~T~~ C. Temporal branch of the facial nerve *behind it*
- ~~T~~ D. Facial artery
- E. Zygomatic branch of the facial nerve

49. Which of the following functions is NOT matched with its correct nerve?

- A. Open the eye - Cranial 5 - sensory - III
- ~~B~~ B. Close the eye - Cranial Nerve 7
- C. Afferent limb of corneal blink reflex - Ophthalmic division of trigeminal
- ~~D~~ D. Dilate the pupil - sympathetic
- ~~E~~ E. Constrict the pupil - Parasympathetic

50. General sensory information from the hard palate travels toward the brain on nerves whose cell bodies are located in the

- A. geniculate ganglion.
- B. otic ganglion.
- C. trigeminal ganglion.
- D. dorsal root ganglion.
- E. pterygopalatine

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^A 1/~~B~~, ^A 2/~~B~~, 3/A, 4/D, 5/E, 6/E, 7/A, 8/C, 9/D, 10/E
11/B, 12/A, 13/C, 14/B, 15/A, 16/C, 17/A, 18/C, 19/C, 20/B
21/B, 22/D, 23/A, 24/D, 25/A, 26/~~B~~^E, 27/B, 28/E, 29/D, 30/E
31/B, 32/B, 33/A, 34/E, 35/B, 36/C, 37/E, 38/C, 39/E, 40/~~C~~^A
41/D, 42/E, 43/~~A~~^D, 44/D, 45/E, 46/A, 47/B, 48/~~C~~^D, 49/A, 50/C

SCANTRON SCORE = 44.0
OTHER POINTS = 5.5
TOTAL SCORE = 49.5/ 50