

COLLEGE OF OSTEOPATHIC MEDICINE OF THE PACIFIC
GROSS ANATOMY FINAL - EXAM
February 2, 1996

Name _____

ID# _____

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Blacken the space under the letter on the answer sheet (Scantron) that corresponds with the MOST CORRECT item in each of the following questions.

1. The Meckel's cartilage of the 1st branchial arch will directly give rise by endochondral ossification to the

- D A. styloid process.
 B. mandible.
 C. stapes.
 D. malleus.
 E. sphenomandibular ligament.

2. The most ^{head} rostral of the somitomers will give rise to the

- B A. trapezius M. and sternocleidomastoid M.
 B. extrinsic muscles of the eye.
 C. muscles of the pharynx.
 D. stylopharyngeus M.
 E. muscles of the tongue.

3. Extension of the lumbar vertebrae is limited by the

- B A. ligamentum flavum.
 B. anterior longitudinal ligament.
 C. posterior longitudinal ligament.
 D. supraspinal ligament.
 E. interspinal ligament.

4. The structure that limits rotation of the head is the

- D A. capsule of the atlantooccipital joint.
 B. anterior atlantoaxial ligament.
 C. posterior atlantooccipital membrane.
 D. alar ligament.
 E. transverse atlantal ligament.

5. The anterior internal vertebral venous plexus communicates with the

- E A. superior petrosal sinus.
 B. superior sagittal sinus.
 C. external cerebral veins.
 D. great cerebral vein.
 E. basilar veins.



6. The segmental artery which is the major source of blood supply to the lower one-third of spinal cord is the

- A. anterior spinal A.
- B. posterior spinal A.
- C. lateral sacral A.
- D. arteria radicularis magna.
- E. ascending cervical A.

D

100%

7. A deep transverse cut in which of the 5 layers of scalp will cause it to gape?

- A. skin
- B. connective tissue layer
- C. aponeurotic layer
- D. loose areolar connective tissue layer
- E. periosteal layer

C

8. All of the following provide cutaneous innervation to the scalp EXCEPT the

- A. temporal branch of VII N₁
- B. lesser occipital N₄
- C. supraorbital N₁
- D. greater occipital N₁
- E. auriculotemporal N₃

A

Victory S = 100
Melo = 5
hand, head



9. The great cerebral vein drains into the

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

C

Scalp is 1/2 from
1/2 from

sensory - trigeminal, occipital
1/2 from
1/2 from
1/2 from
1/2 from

10. All of the following nerves are in the lateral wall of the cavernous sinus EXCEPT the

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

B

only 2

11. All of the following are associated with the oropharynx EXCEPT the

- A. palatopharyngeus M.
- B. middle pharyngeal constrictor M.
- C. torus tubarius. Nasopharynx. Spharynx
- D. palatoglossus M.
- E. fauces.

C

1/2 from
1/2 from
1/2 from
1/2 from
1/2 from
1/2 from
1/2 from
1/2 from

12. Which of the following nerves provides sensory innervation to the pharyngeal plexus?

- B A. vagus
 B. glossopharyngeal
 C. hypoglossal
 D. accessory
 E. lingual

X

insensory by ...
except ...

13. All of the following are related to the deep part of the parotid gland EXCEPT the

- D A. medial pterygoid M.
 B. carotid sheath.
 C. styloid MM.
 D. buccal fat pad.
 E. lateral pharyngeal space.



14. The pterygoid plexus of veins communicates directly into all of the following EXCEPT the

- B A. facial V.
 B. external jugular V.
 C. cavernous sinus.
 D. inferior ophthalmic V.
 E. maxillary V.



15. The muscle that tenses the vocal cords is the

- D A. lateral cricoarytenoid.
 B. posterior cricoarytenoid.
 C. thyroarytenoid.
 D. cricothyroid.
 E. aryepiglottic.

16. Tonsillar branches from all the following arteries supply the palatine tonsil EXCEPT

- B A. dorsal lingual A.
 B. sphenopalatine A.
 C. facial A.
 D. ascending pharyngeal A.
 E. ascending palatine.

17. A lesion to the facial nerve just distal to the stylomastoid foramen will affect all of the following EXCEPT the

- B A. ability to close eyelids.
 B. taste from anterior 2/3 of the tongue.
 C. ability to play the trumpet.
 D. ability to wink.
 E. ability to whistle.



18. The facial nerve innervates all of the following muscles EXCEPT the

- A
- A. levator palpebrae superioris. ✓
 - B. orbicularis oculi. ✓
 - C. platysma. ✓
 - D. buccinator. ✓
 - E. posterior belly of digastric. ✓

19. The anterior lateral nasal wall is supplied by the

- A
- A. anterior ethmoidal A.
 - B. sphenopalatine A.
 - C. descending palatine A.
 - D. ascending pharyngeal A.
 - E. maxillary A.

20. The nasal septum is made up of all of the following EXCEPT the

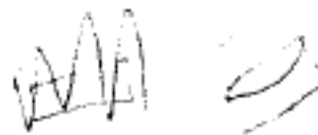
- B
- A. septal cartilage.
 - B. crista galli.
 - C. perpendicular plate of the ethmoid.
 - D. vomer.
 - E. nasal crest of palatine bone.

21. All of the following are branches of the maxillary artery EXCEPT the

- D
- A. middle meningeal A.
 - B. anterior tympanic A.
 - C. inferior alveolar A.
 - D. submental A.
 - E. posterior superior alveolar A.

22. Which of the following denotes the inferior margin of the quadrangular membrane?

- A
- A. vestibular ligament
 - B. aryepiglottic fold
 - C. hyoepiglottic ligament
 - D. vocal ligament
 - E. conus elasticus



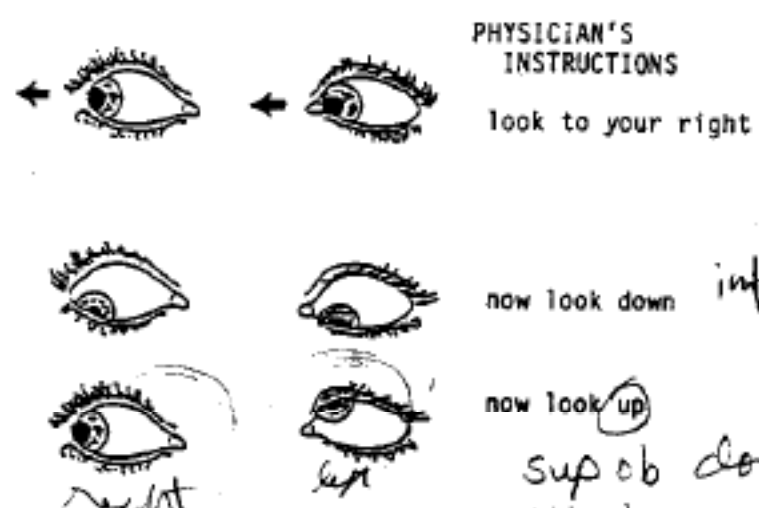
23. All of the following paranasal sinuses open in the middle meatus EXCEPT the

- B
- A. frontal.
 - B. sphenoid.
 - C. anterior ethmoid.
 - D. middle ethmoid.
 - E. maxillary.

24. Which of the following statements does not accurately describe the superior oblique muscle?

- A. Its tendon passes through a trochlea in the superior medial corner of the orbit. ^T
- B. Its tendon lies superior to the superior rectus muscle at its insertion. ^F**
- C. It inserts posterior to the mechanical axis of the eyeball. ^T
- D. It depresses, abducts and intorts gaze. ^T
- E. It is innervated by the trochlear nerve. ^T

25. Your patient has the gaze defect shown below. Which of the following extra-ocular muscle is NOT functioning properly (left and right refer to the patient's left and right)?



med rectus

inferior oblique

SO4

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

sup ob down, a.o. in

inf. ob up, a.b. ex

sup rectus up, a.i. n

infer. rectus down, a.l. ex

26. Which of the following statements does not accurately describe the relationships of the middle ear cavity?

- A. The bulb of the internal jugular vein lies in the bony floor of the cavity. ^T
- B. The aditus or entrance to the mastoid air cells lies in the superior corner of the posterior wall. ^T
- C. The auditory tube opens in the anterior wall just inferior to the canal of the tensor tympani. ^T
- D. The lesser petrosal nerve forms in the tympenic plexus and exits into the cranial cavity through the anterior wall. ^F**
- E. The promontory of the medial wall covers the lateral semicircular canal. ^T

not wall

DOE

medial wall

27. Which of the following statements does not accurately describe the tympanic membrane?

- D
- A. The skin over the lateral surface of the membrane is innervated by the auriculotemporal nerve(V₃) and the auricular branch of the vagus(X). T
 - B. The membrane is tilted inferomedially to superolaterally. T
 - C. Normally light from an otoscope is reflected (cone of light) from the anterior-inferior quadrant of the membrane. T
 - D. The chorda tympani crosses just medial to the inferior half of the tympanum. ^{superior} F
 - E. The umbo represents the attachment of tympanic collagen fibers to the manubrium of the malleus. T

28. Which of the following statements does not accurately describe the middle ear?

- B
- A. The mucous membrane lining the middle ear and auditory tube is innervated by the glossopharyngeal nerve(IX). T
 - B. The footplate of the stapes fits into the cochlear or round window. T
 - C. The middle ear amplifies sound primarily because the energy gathered from a large area - the tympanic membrane - is applied to a small area at the footplate of the stapes. T
 - D. Activity of the M. tensor tympani damps vibration of the malleus. T
 - E. The M. tensor tympani is innervated by the mandibular division of the trigeminal. T

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

Column A	Column B
C 29. <u>C</u> taste - anterior 2/3 tongue	A. glossopharyngeal
E 30. <u>E</u> skin - lower eyelid	B. lingual
D 31. <u>B</u> skin over angle of mandible	C. chorda tympani
A 32. <u>A</u> general sense - posterior 1/3 tongue	D. greater auricular N
	<u>E</u> maxillary

Match the muscles in column A with the appropriate nerves listed in column B that supply them.

Column A	Column B
E 33. <u>E</u> superior pharyngeal constrictor ^{superior} D	A. VII N
C 34. <u>C</u> mylohyoid V	B. cervical plexus
D 35. <u>D</u> genioglossus T	C. V N
	D. XII N
	E. X N

Match the muscles in column A with their main actions listed in column B.

Column A

- D 36. D masseter
A 37. A lateral pterygoid
B 38. B genioglossus
C 39. C styloglossus

Column B

- A. protrudes mandible
B. protrudes tongue
C. retracts tongue
D. elevates mandible
E. depresses hyoid bone

Match the nerves in column A with components listed in column B.

Column A

- C 40. C greater petrosal *preganglionic*
B 41. B deep petrosal
A or C 42. A lesser petrosal
C 43. C chorda tympani
A 44. A nerve of pterygoid canal
D 45. D short ciliary nerves

Column B

- A. preganglionic parasympathetic,
postganglionic sympathetic
B. postganglionic sympathetic
C. preganglionic parasympathetic
~~B.~~ postganglionic parasympathetic,
postganglionic sympathetic
E. preganglionic sympathetic

Match the four parasympathetic ganglia in column B that provide visceral fibers to structures listed in column A.

Column A

- D 46. D mucosa of nasal cavity
A 47. A parotid gland
D 48. D lacrimal gland
C 49. C constrictor pupillae M
C 50. C ciliary M

Column B

- A. otic
B. submandibular
C. ciliary
D. pterygopalatine

Bonus questions

51. The main type of neurons going to the suprarenal medulla are

- A A. preganglionic sympathetic.
 B. postganglionic parasympathetic.
 C. postganglionic sympathetic.
 D. preganglionic parasympathetic.
 E. visceral afferent.

52. The medial meniscus of the knee joint is most firmly attached to the

- E A. fibular collateral ligament.
 B. patellar ligament.
 C. popliteus tendon.
 D. biceps femoris tendon.
 E. tibial collateral ligament.

53. That portion of the pelvic diaphragm that forms a sling around the rectoanal junction is the

- C A. pubococcygeus M.
 B. coccygeus M.
 C. puborectalis M.
 D. iliococcygeus M.
 E. deep part, levator ani externus M.

54. The termination of the aortic arch is at the level of the

- B A. sternal attachment of the first rib.
 B. sternal attachment of the second rib.
 C. vertebral attachment of the sixth rib.
 D. sternal attachment of the clavicle.
 E. sternal attachment of the third rib.

KEY # 1 TO EXAMINATION: GROSS/96/FE

Process Date: 02/07/96

There are 54 questions on this exam.

QUESTION/ANSWER

1/D, 2/B, 3/B, 4/D, 5/E, 6/D, 7/C, 8/A, 9/C, 10/B

11/C, 12/B, 13/D, 14/B, 15/D, 16/B, 17/B, 18/A, 19/A, 20/B

21/D, 22/A, 23/B, 24/B, 25/B, 26/DE, 27/D, 28/B, 29/C, 30/E

31/D, 32/A, 33/E, 34/C, 35/D, 36/D, 37/A, 38/B, 39/C, 40/C

41/B, 42/AC, 43/C, 44/A, 45/D, 46/D, 47/A, 48/D, 49/C, 50/C

51/A, 52/E, 53/C, 54/B

LAB PRACTICAL EXAM
COMP

Name _____ KEY _____

I.D. # _____

- | | |
|--|---|
| 1. <u>Middle meningeal A.</u> | 26. <u>Lateral rectus M.</u> |
| 2. <u>Piriform recess</u> | 27. <u>Palatoglossal fold</u> |
| 3. <u>Infraorbital foramen (bone)</u> | 28. <u>Nasociliary N.</u> <i>deep inside</i> |
| 4. <u>Hamulus, med. pterygoid plate (bone)</u> | 29. <u>Glossopharyngeal N.</u> |
| 5. <u>Foramen spinosum (bone)</u> | 30. <u>Trochlear N.</u> |
| 6. <u>Internal acoustic meatus (bone)</u> | 31. <u>Buccinator M.</u> |
| 7. <u>Bulla ethmoidalis</u> | 32. <u>Lingual N.</u> |
| 8. <u>Levator veli palatini M.</u> | 33. <u>Greater palatine N.</u> |
| 9. <u>Inferior oblique M.</u> | 34. <u>Zygomaticus major M.</u> |
| 10. <u>Greater palatine foramen (bone)</u> | 35. <u>Mylohyoid M.</u> |
| 11. <u>Lingula (bone)</u> | 36. <u>Medial pterygoid M.</u> |
| 12. <u>Carotid canal (bone)</u> | 37. <u>(Post.) cricoarytenoid M.</u> <i>abs = 1/2</i> |
| 13. <u>Groove for sigmoid sinus (bone)</u> | 38. <u>Infraorbital N.</u> <i>Max. div. V₃ = 1/2</i> |
| 14. <u>Crista galli (bone)</u> | 39. <u>Mylohyoid N.</u> |
| 15. <u>Lateral pterygoid M. (X-Sec)</u> | 40. <u>Chorda tympani N.</u> |
| 16. <u>Foramen rotundum (bone)</u> | 41. <u>Torus tubarius</u> |
| 17. <u>Lacrimal caruncle (surf. anat.)</u> | 42. <u>Submandibular duct</u> |
| 18. <u>Hypoglossal N.</u> | 43. <u>Pterygopalatine ganglion</u> |
| 19. <u>Internal br., Sup. laryngeal N.</u> | 44. <u>Int. carotid A.</u> |
| 20. <u>Vocal ligament</u> | 45. <u>Tensor veli palatini M.</u> |
| 21. <u>Lingual tonsil</u> | 46. <u>Genioglossus M.</u> |
| 22. <u>Facial A.</u> | 47. <u>Stylopharyngeus M.</u> |
| 23. <u>Superf. temporal A.</u> | 48. <u>Levator labii superioris M.</u> <i>Lev ang - 1/2</i> |
| 24. <u>Right hypoglossal N. (surf. anat.)</u> | 49. <u>Dens (X-Ray)</u> |
| 25. <u>Deep temporal A.</u> | 50. <u>Internal carotid A. (X-Ray)</u> |