

DENTAL GROSS ANATOMY

FIRST EXAMINATION

JANUARY 18, 2000

Corrected

Name [REDACTED]

Questions 1 - 33 of this examination will be graded by computer and should be answered on the accompanying computer answer sheet. On the computer answer sheet your name and social security number should be PRINTED in the boxes indicated and the appropriate black marks made for the computer format of your name and social security number in the spaces below.

Write "OXBERRY" in the space provided for instructor.

Record your answer for each question on the answer sheet. Mark each correct response on the data sheet using numbers 1 through 33 with a HEAVY BLACK MARK with a #2 PENCIL. (If you erase, be sure to erase fully.)

Note that there are some specific directions within the body of the examination for specified blocks of questions. Statements in brackets are only used to clarify or give an alternate name; they are NOT meant to change the nature of the question.

There is just ONE CORRECT ANSWER for each question.

One of the types of questions previously employed by the National Boards is the "K type" question. For these you will answer:

- A. IF 1, 2 AND 3 ARE CORRECT.
- B. IF 1 AND 3 ARE CORRECT.
- C. IF 2 AND 4 ARE CORRECT.
- D. IF 4 ONLY IS CORRECT.
- E. IF ALL ARE CORRECT.

FOR QUESTIONS 1 THROUGH 24 SELECT THE SINGLE BEST ANSWER.

1. The nerve innervating the sternocleidomastoid muscle is the...

- A. Spinal accessory *trapez*
- B. Transverse cervical *Anterior Cervical Δ.*
- C. Supraclavicular
- D. Suprascapular *supraspinatus & infraspinatus muscles.*

2. Sensory innervation to the skin of the "shoulder pad" region is by...

A.	C2
B.	C4
C.	C6
D.	C8

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graph TD
    HC[Hyoid cartilage] --- TC[trans cervical]
    HC --- SC[Suprascap]
    HC --- SCL[subclavian]
  
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3. The blood supply to the supra- and infraspinatus muscles is from a branch of the...

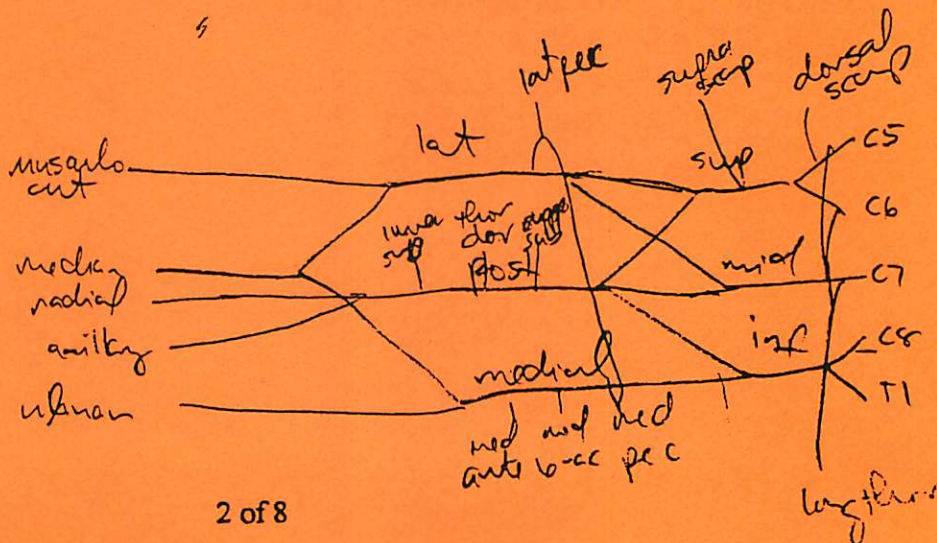
- A. Thoracoacromial trunk of the axillary artery *delt, pec, sternal, acromion*
- B. Lateral thoracic artery *sevent*
- C. Thyrocervical trunk of the subclavian artery
- D. Posterior humeral circumflex branch of the axillary artery *delt, humerus*

4. Which of the following structures does **NOT** form a boundary of the axilla?

- ~~A.~~ Humerus
- B. Latissimus dorsi muscle
- ~~C.~~ Pectoralis major muscle
- D. Brachialis muscle

5. Inability to initiate abduction of the right upper limb would indicate a problem with which part of the brachial plexus on that side? *suprascapular*

☒ A. Superior trunk
☐ B. Middle trunk
☐ C. Inferior trunk
☐ D. Lateral cord



6. In the female breast, which of the following muscles lies along the path of the drainage of lymphatic vessels into axillary lymph nodes?

- A. Subscapularis
- ☒ B. Pectoralis major
- C. Teres major
- D. Serratus anterior

7. Injury to which of the following nerves would produce medial winging of the scapula?

- ☒ A. long thoracic nerve
- B. dorsal scapular nerve
- C. suprascapular nerve
- D. spinal accessory nerve

Serratus cut
↓
long thoracic

8. Which of the following muscles can externally rotate the humerus at the shoulder joint?

- ~~A. teres major~~
- ~~B. latissimus dorsi~~
- ☒ C. teres minor
- ~~D. subscapularis~~

9. An irritative lesion of the diaphragm could produce referred pain in the:

- A. C6 dermatome.
- ☒ B. skin over the shoulder pad area.
- C. zygapophyseal (facet) joints.
- D. skin over the medial arm.

10. Which of the following statements about the deltoid muscle is NOT correct?

- ~~A. Receives innervation from the axillary nerve.~~
- ~~B. Forms one boundary of the deltopectoral groove.~~
- ☒ C. Is a powerful shoulder adductor. *abductor*
- D. Receives blood supply from the posterior humeral circumflex artery.

11. Which of the following statements about the pectoralis major muscle is NOT correct?

- ~~A. It receives motor innervation from the lateral pectoral nerve.~~
- ~~B. It inserts on the humerus.~~
- ~~C. It receives motor innervation from the medial pectoral nerve.~~
- ☒ D. It externally rotates the shoulder.

internal

12. Which of the following statements about the latissimus dorsi muscle is NOT correct?

- ☒ A. It receives motor innervation from the thoracodorsal nerve.
- ☐ B. It forms the posterior boundary of the axilla.
- ☒ C. It externally rotates the shoulder. *int. rot.*
- ☐ D. It originates in part from the thoracolumbar fascia.

13. All of the following deficits could result from a lesion of the ulnar nerve at the elbow EXCEPT:

- ☒ A. Inability to flex the DIP joint of the middle finger.
- ☐ B. Sensory loss in skin over the medial 1½ digits of the hand.
- ☐ C. Inability to adduct the thumb.
- ☐ D. Inability to adduct the little finger. *int. os Prox*

14. A "dropped wrist" (inability to extend wrist) usually indicates damage to the:

- ☐ A. median nerve
- ☐ B. ulnar nerve
- ☐ C. musculocutaneous nerve
- ☒ D. radial nerve

15. Weakness in the *rad* opponens pollicis, 1st and 2nd *rad* lumbricals, *rad* abductor pollicis brevis, and *rad* flexor pollicis brevis muscles would indicate a lesion in the:

- ☐ A. radial nerve at the elbow
- ☐ B. ulnar nerve at the wrist
- ☐ C. musculocutaneous nerve
- ☒ D. median nerve at the wrist

16. A patient with carpal tunnel syndrome would exhibit all of the following deficits EXCEPT:

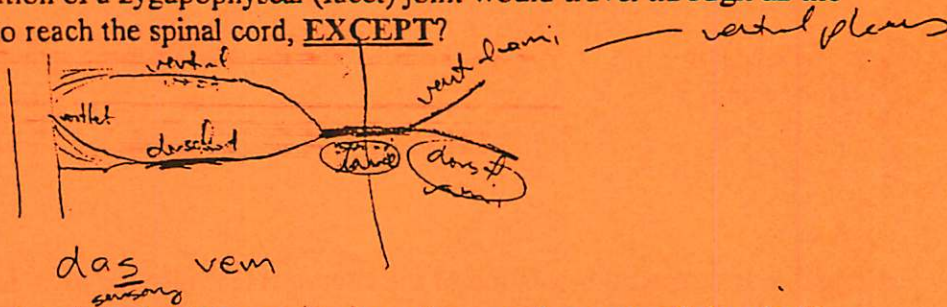
- ☒ A. Sensory loss in skin on the palmar aspect of the lateral 3½ digits. *rad*
- ☐ B. Weakness in thumb opposition. *rad*
- ☐ C. Weakness in simultaneous MP joint flexion and IP joint extension of the 2nd and 3rd digits. *lumbr*
- ☒ D. Sensory loss in skin over the lateral ½ of the palm. *not in carpal tunnel*

17. The superior border of an intervertebral foramen is formed by which part of a vertebra?

- ☐ A. superior articular process
- ☒ B. pedicle
- ☐ C. body
- ☐ D. inferior articular process

18. The pain related to inflammation of a zygapophyseal (facet) joint would travel through all the following neural structures to reach the spinal cord, EXCEPT? *semi-spinal ventral p*

- ~~A~~ spinal nerve
- B ventral root
- ~~C~~ dorsal ramus
- ~~D~~ dorsal root



19. A patient is experiencing neck pain in the skin over the lateral arm and spasms of rhomboid muscles. Evaluation indicates a herniated disc compressing a spinal nerve. The intervertebral disc which is herniated lies between _____ vertebrae.

A.	C3-C4
B.	C4-C5
C.	C5-C6
D.	C6-C7

don't sleep

C5

15

C4
C5
C5

20. The subarachnoid space

- A. ✓ is filled with cerebrospinal fluid
- B. extends caudally to about L3 vertebral level 52
- C. lies between the arachnoid and ~~dural~~ mater 2 pia
- D. contains the internal vertebral plexuses of veins which connect with veins in the skull
epidural space



21. Palpation of the vertebra prominens would identify the spine of the _____ vertebra.

A.	L4
B.	C7
C.	T1
D.	T3

C7
T3
T7
L4
S2

22. When a sample of cerebrospinal fluid is needed for testing, a spinal tap is usually performed at lower lumbar vertebral levels because: L2 - S2

- ☒ A. below L2 the subarchnoid space contains only dorsal and ventral roots of spinal nerves.
- ☐ B. this is the only vertebral level where cerebrospinal fluid is found.
- ☐ C. the spinal cord is smaller at lower lumbar levels.
- ☐ D. the very thick dural mater, which can hinder needle penetration, is absent at these levels.

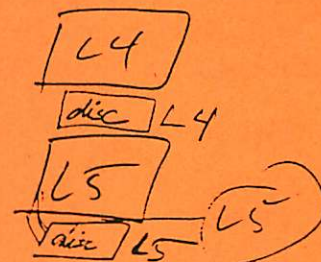


23. Bilateral contraction of the erector spinae muscles would result in _____ of the vertebral column.

- ☒ A. extension
 B. abduction
 C. flexion
 D. adduction

24. A small, posterolateral herniation of the intervertebral disc between L4-L5 would most likely impinge upon the _____ spinal nerve.

- ☒ A. L5
 B. L4
 C. L3
 D. S1



QUESTIONS 25 THROUGH 33 ARE K-TYPE

- ANSWER: A. IF 1, 2 AND 3 ARE CORRECT
 B. IF 1 AND 3 ARE CORRECT
 C. IF 2 AND 4 ARE CORRECT
 D. IF ONLY 4 IS CORRECT
 E. IF ALL ARE CORRECT

25. Which of the following nerves arise(s) from the posterior cord of the brachial plexus?

- ☒ 1. Dorsal scapular
☒ 2. Thoracodorsal
☒ 3. Suprascapular
☒ 4. Axillary

26. In the neck region, the roots of the brachial plexus are directly related to which of the following muscles?

- ☒ 1. Anterior scalene
☒ 2. Inferior belly of the omohyoid
☒ 3. Middle scalene
☒ 4. Trapezius

- ANSWER: A. IF 1, 2 AND 3 ARE CORRECT
 B. IF 1 AND 3 ARE CORRECT
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27. Severing the medial cord of the brachial plexus at its beginning would completely paralyze which of the following muscles?

1. Pectoralis minor
 2. Pectoralis major *medial*
 3. Flexor carpi ulnaris
 4. Flexor digitorum profundus *also used*



28. A destructive lesion of the suprascapular nerve would result in weakness in:

1. external rotation of the humerus. ✓ *infra 2 supra*
 2. depression of the scapula. ✗
 3. abduction of the humerus. ✓ *abduct*
 4. adduction of the scapula. ✗

29. Injury of which of the following would cause weakness in upward rotation of the lateral angle of the scapula?

1. levator scapulae muscle ✓
 2. serratus anterior muscle
 3. subscapularis muscle
 4. trapezius muscle



30. A fracture of the surgical neck of the humerus with injury to the axillary nerve would produce weakness in:

1. shoulder adduction
 2. external rotation of the shoulder ✓
 3. internal rotation of the shoulder ✓
 4. shoulder abduction ✓

delt
teres minor

deltoid Abd.
Teres Minor

31. Which of the following correctly describe the location of the dermatomes in the upper extremity?

1. C5 - lateral forearm
 2. C6 - middle finger and middle of hand
 3. C4 - lateral aspect of arm
 4. T1 - medial aspect of forearm

- ANSWER: A. IF 1, 2 AND 3 ARE CORRECT
B. IF 1 AND 3 ARE CORRECT
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32. In the cubital fossa the

- radial*
- ~~1.~~ biceps tendon inserts into the ulnar tuberosity.
 - ~~2.~~ bicipital aponeurosis lies deep to the brachial artery.
 - ~~3.~~ median nerve passes posterior to the medial epicondyle of the humerus.
 - 4. structures found from lateral to medial are the biceps tendon, brachial artery, and median nerve.

33. A midshaft fracture of the humerus severs a nerve in the posterior compartment of the arm. What motor and sensory deficits would be present?

- radial*
- 1. loss of finger extension at the MP joints
 - 2. loss of wrist extension
 - 3. sensory loss over the dorsum of the radial 3½ digits
 - 4. loss of elbow extension

END OF QUESTIONS

10
PRINT NAME

SS#

Questions 27 - 37 of this examination are worth 2 points each and are short answer questions that require you to fill in the blank or blanks with the correct missing word or words. The answers should be written directly in the blank spaces provided on this page and the following page. Be sure to PRINT your name and social security number in the spaces provided on each of these pages. Be sure to tear off and turn in these pages at the end of the exam.

33. The Posterior humeral circumflex artery accompanies the axillary nerve to the deltoid muscle.

34. From the brachial plexus, the two terminal nerves carrying posterior division fibers are the Radial and the axillary nerves.

35. The deficits associated with carpal tunnel syndrome are caused by compression of the Median nerve.

36. The Median nerve and brachial artery are at risk of injury in a poorly performed venapuncture of the median cubital vein.

(beneath the bicipital aponeurosis)

37. The pulse of the radial artery is palpated immediately lateral to the flexor carpi radialis muscle.

END OF QUESTIONS