



# ROSS UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

# KEY

## VMA- 5113 Gross Anatomy I Examination 2 November 20, 2003

75 points

Time limit: 120 minutes to turn in **COMPLETED** Scantron sheet- no extra time given to transfer answers!

**No talking or questions** during examination  
**Remain in seat** until you are finished with the exam  
Turn in only Scantron portion  
**Keep this booklet**

Fill in Scantron as follows:

- For ID NUMBER, use the last six digits of SSN beginning in **LEFT HAND MOST Blank-** and bubble in below
- Last name-space-first name- and bubble in below
- Bubble in TEST FORM **A**
- Leave EXAM NUMBER **blank**
- In area for "Name, Subject, Date, Hour/Day," put in the following three identifiers **ONLY:**

I.D. NUMBER: 0 2 9 6 8 7

LAST NAME: HUTCHISON, FIRST NAME: CHARLES, M.I.:

TEST FORM: A

NAME \_\_\_\_\_

SUBJECT \_\_\_\_\_

DATE \_\_\_\_\_ HOUR/DAY \_\_\_\_\_

EXAM NUMBER

**X**

- Do over-mark scantron sheet, simply darken bubbles **entirely**
- Make any and all erasures complete
- On multiple choice questions, choose the **single** best answer

**Take test on the booklet first making any and all changes before transferring answers to Scantron sheet**

1. Which list contains at least one organ or part **not** normally visible on plain-film radiographic views of the abdomen?
  - A) Jejunum, urinary bladder, spleen, liver, crura of diaphragm, os penis, prepuce
  - B) Fundus of stomach, body of stomach, transverse colon, descending colon, nipples
  - C) Scrotal shadow, ascending colon, body of stomach, left kidney, fold of flank
  - D) Right adrenal, pancreas, ovary, ureter, jejunal lymph nodes, ileum, uterine horn**
  - E) Right kidney, spleen, urinary bladder, rectum, descending colon, left kidney
  
2. Which vessel is **not** correctly placed?
  - A) Paraconal interventricular branch left coronary artery in paraconal interventricular groove
  - B) Great cardiac vein in coronary groove
  - C) Subsinuosal interventricular branch left coronary artery in subsinuosal interventricular groove
  - D) Circumflex branch left coronary artery in coronary groove
  - E) Right coronary artery in subsinuosal interventricular groove**
  
3. Which is **incorrect** in reference to the spinal cord?
  - A) The dorsal funiculus houses ascending tracts primarily
  - B) A part of the intermediolateral cell column for the sympathetic nervous system might be found in the 8<sup>th</sup> thoracic spinal cord segment
  - C) Neurons of the phrenic nerve might be found in the 5<sup>th</sup> cervical spinal cord segment
  - D) The cauda equina is the tapered termination of the spinal cord in the lumbar vertebral canal**
  - E) The central canal is lined with ependymal cells
  
4. Which is **true** concerning ventrodorsal hip radiographs and a tendency toward hip luxation?
  - A) Femoral neck length should be long for good joint congruency; if it is short, upward joint force loads exceeds 4.5 times the gravitational limb load**
  - B) The articulothrochanteric distance should be really long
  - C) Acetabular slope angle should be high (>45 degrees)
  - D) Femoral head coverage angle should be low (<90 degrees)
  - E) Angle of inclination of the femoral neck/shaft should approach 180 degrees
  
5. **T or F** All of the following muscles have an origin upon the scapula: infraspinatus, supraspinatus, teres minor, teres major, biceps brachii and triceps brachii.
  
6. **T or F** The majority of cerebrospinal fluid in the spinal cord region is found between the pia mater and the arachnoid.
  
7. Which cranial nerve listed has a significant amount of all three: parasympathetic autonomic motor, somatic motor and sensory functions?
 

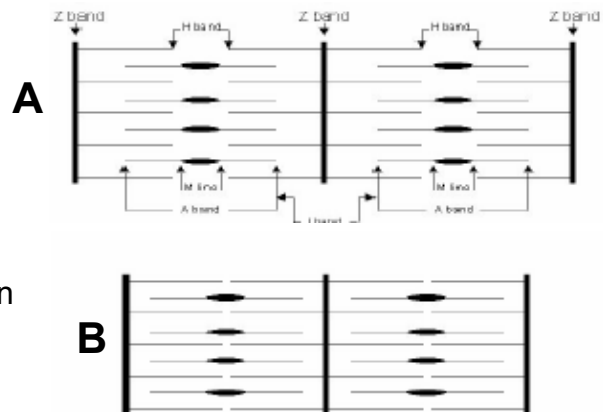
<b>A) Facial</b>	D) Trigeminal
B) Oculomotor	E) Vestibulocochlear
C) Hypoglossal	
  
8. Which bone contributes to the formation of the zygomatic arch?
 

<b>A) Temporal</b>	D) Palatine
B) Sphenoid	E) Vomer
C) Nasal	

9. Which muscle is the most superficial of the facial muscles innervated by the facial nerve?  
 A) Masseter  
 B) Depressor labii inferioris  
 C) **Platysma**  
 D) Buccinator  
 E) Temporalis

10. Which clock-face analogy is **incorrect**? (VD=ventrodorsal)  
 A) **VD view- left auricle at 4-5:00**  
 B) Lateral view- right ventricle at 8:00  
 C) Lateral view- left ventricle at 4:00  
 D) VD view- right ventricle at 8:00  
 E) VD view- right atrium at 10:00

11. Diagram "**B**" at right shows:  
 A) Two myofibers in a state of relaxation  
 B) Two myofibers in a state of contraction  
 C) Two sarcomeres in a state of relaxation  
 D) **Two sarcomeres in a state of contraction**  
 E) Action and myelin molecular overlap during rigor mortis



12. Which cranial nerve uses more than one foramen in the skull on its course?  
 A) **Olfactory**  
 B) Trochlea  
 C) Abducent  
 D) Oculomotor  
 E) Optic

13. The duct of which salivary gland was located as it coursed rostrally across the lateral surface of the masseter?  
 A) Sublingual  
 B) **Parotid**  
 C) Mandibular  
 D) Buccal  
 E) Zygomatic

14. The main clinical difference in proximal and distal radial nerve injuries involves:  
 A) Sensory losses over the antebrachium  
 B) Losses of both paw and antebrachial muscle functions  
 C) **Loss of elbow extension**  
 D) Sensory losses over the lateral shoulder  
 E) Loss of elbow flexion
15. Which is **not** a component of a simple spinal cord reflex arc such as a patellar tendon reflex?  
 A) Intermediate gray  
 B) Neuromuscular junction  
 C) Ventral rootlets  
 D) Sensory dendrite  
 E) **Lateral funiculus**

16. Intervertebral disks sometimes herniate; choose the most **correct** statement concerning this:
- A) Although painful, this seldom results in neurologic dysfunction because, due to their anatomy, most disks herniate ventrally away from the spinal cord and nerve roots
  - B) Disks cannot herniate dorsally anywhere in the spine due to the presence of the Intercapital ligaments
  - C) The affect of disk herniations is often worse in the cervical area because of the relative smallness of the diameter of the vertebral canal there
  - D) Disks often herniate to slightly to one side or the other because of the dorsal longitudinal ligament**
  - E) The ligamentum nuchae prevents most herniations in the cervical region
17. Which ligaments bridge successive vertebral arches?
- A) "Yellow" ligaments**
  - B) Dorsal longitudinal
  - C) Interspinous
  - D) Intertransverse
  - E) Supraspinous
18. Arteries contributing to branches that supply the spinal cord include all **but** which one?
- A) Vertebral
  - B) Costocervical
  - C) Intercostal
  - D) Common carotid**
  - E) Lumbar
19. A needle was placed through the left fourth intercostal space and cardiac notch in order to perform a pericardiocentesis and withdraw nothing but pericardial fluid. Which is the correct number of serous layers the needle penetrated in this procedure, if done correctly?
- A) 2
  - B) 3**
  - C) 4
  - D) 5
  - E) 6
20. There are dorsal root ganglia but no ventral root ganglia because:
- A) Of the location of the sensory versus the motor cell bodies**
  - B) There are no ventral roots, only dorsal ones
  - C) The ventral root has no rootlets
  - D) The somatic motor ganglia are far removed from the area of the spinal cord and found in the body cavities (thoracic, abdominal and pelvic)
  - E) The motor cell bodies are in the brain, not spinal cord area
21. If you were to perform an intrapulmonary injection, which part of the lung you would recommend using from an anatomical point of view?
- A) Dorsal border**
  - B) Ventral border
  - C) Basal border
  - D) Mediastinal surface
  - E) Cardiac notch
22. **T** or **F**: The cardiac notch of the left lung is located between the cranial and caudal lobes.
23. **T** or **F**: The cardiac notch of the right lung is located between the cranial and middle lobes.

24. The base of the lung is directed toward the  
A) Caudal mediastinum  
**B) Diaphragm**  
C) Pericardium  
D) Cupula pleurae  
E) Pericardial mediastinum
25. The accessory lobe of the right lung has a notch through which passes the  
A) Aorta  
B) Esophagus  
C) Right azygos vein  
**D) Caudal vena cava**  
E) Thoracic duct
26. T or F: In dog, both cranial poles of the kidneys are found at the same level in the abdominal cavity.
27. Which one of the following structures does **not** contribute to the fixation of the kidney  
A) Left renal artery  
B) Right renal artery  
C) Left renal vein  
D) Left testicular vein  
**E) Phrenicoabdominal vein**
28. Which one of the following female genital organs is **misplaced** in its cranio-caudal sequence  
A) Ovary  
**B) Tip of the uterus**  
C) Uterine tube  
D) Uterine horn  
E) Uterine body
29. The position of the canine ovary is  
**A) Highly dorsal in the abdominal cavity immediately caudal to the caudal pole of the kidney**  
B) Highly dorsal in the abdominal cavity at the level of the 7th lumbar vertebra  
C) In the middle of the abdominal cavity  
D) In the abdominal cavity caudally at the level of the pelvic inlet  
E) On the ventral abdominal wall
30. Which one of the following structures does **not** contribute to the fixation of the canine ovary  
A) Suspensory ligament  
B) Proper ligament  
C) Mesovarium  
D) Mesosalpinx  
**E) Mesometrium**

31. Which one of the following structures contributes the greatest share to the formation of the ovarian bursa
- A) Suspensory ligament
  - B) Proper ligament
  - C) Mesovarium
  - D) Mesosalpinx**
  - E) Mesometrium
32. T or F: The dorsal vagal trunk has a significant amount of sympathetic fibers.
33. T or F: The peritoneal cavity of the bitch is connected to the outside world by the abdominal ostium of the uterine tube.
34. T or F: The uterine tube of the bitch is composed of the infundibulum with fimbriae, ampulla, isthmus, uterine ostium and tip of the uterine horn.
35. The uterine tube is located between the two peritoneal laminae of the
- A) Mesovarium
  - B) Mesosalpinx**
  - C) Mesometrium
  - D) Broad ligament of the uterus
  - E) Round ligament of the uterus
36. The caudal end of the peritoneal cavity is characterized by the presence of the following spaces, except the:
- A) Ischiorectal fossa**
  - B) Pararectal fossa
  - C) Rectogenital pouch
  - D) Vesicogenital pouch
  - E) Pubovesical pouch
37. The part of the intestine joining the stomach is the:
- a. Jejunum;
  - b. descending duodenum;
  - c. ascending duodenum;
  - d. cranial part of the duodenum;**
  - e. cranial flexure.
38. The part of the small intestine that joins the large intestine is the:
- a. jejunum
  - b. ileum;**
  - c. cecum;
  - d. ascending colon;
  - e. transverse colon.

39. A part of the large intestine that joins the descending colon is the:
- ascending colon;
  - cecum;
  - anus;
  - spleen;
  - transverse colon.**
40. One of the following is **not** a part of the duodenum:
- pylorus;**
  - transverse part;
  - cranial part;
  - cranial flexure;
  - caudal flexure.
41. The cecum is a part of the:
- ascending colon;
  - transverse colon;
  - large intestine;**
  - rectum;
  - ileum.
42. A part of the intestine that normally touches the parietal peritoneum of the right abdominal wall is the:
- ascending duodenum;
  - descending colon;
  - greater omentum;
  - descending duodenum;**
  - transverse colon.
43. The superficial inguinal ring is an opening that is:
- in the aponeurosis of the internal abdominal oblique muscle;
  - medial to the rectus abdominis muscle;
  - caudal to the inguinal ligament;
  - in the aponeurosis of the transversus abdominis muscle;
  - a passage for the external pudendal artery and vein.**
44. Choose the single **incorrect** answer. The external lamina of the rectus sheath:
- is formed by the aponeurosis of the internal abdominal oblique muscle;
  - is formed by the caudal part of the aponeurosis of the transversus abdominis muscle;
  - is formed by the cutaneous trunci muscle;**
  - is formed by the aponeurosis of the external abdominal oblique muscle;
  - is external to the rectus abdominis muscle.
45. Choose the single **incorrect** answer: Blood passing in the hepatic veins:
- may have traversed two sets of capillaries;
  - may have traversed a single set of capillaries;
  - has all passed through two sets of capillaries;**
  - has all passed through the abdominal aorta;
  - has all passed through the hepatic sinusoids.

46. Choose the single **incorrect** answer: The ileocolic artery supplies the:
- cecum;
  - ileum;
  - transverse colon;
  - ascending colon;
  - descending colon and rectum.**
47. Choose the single **incorrect** answer: The gastroduodenal vein:
- receives veins from the stomach;
  - receives veins from the duodenum;
  - receives veins from the liver;**
  - joins the portal vein;
  - receives veins from the greater omentum.
48. Jejunal lymph nodes are located:
- in the mesocolon;
  - in the mesoileum;
  - in the mesoduodenum;
  - in the mesojejunum;**
  - in the greater omentum.
49. T/F: The anal sphincter contains both striated and smooth muscle.
50. Choose the single **incorrect** statement. Parasympathetic fibers are present in the:
- pelvic nerve;
  - dorsal vagal trunk;
  - perivascular plexus of the caudal pancreaticoduodenal artery;
  - pelvic plexus;
  - hypogastric nerves.**
51. T or F The femur is found in the crus region of the pelvic limb
52. Which bones contribute to the formation of the obturator foramen?
- Ischium, pubis and acetabular
  - Ischium and pubis**
  - Pubis and acetabular
  - Pubis, ilium, ischium and acetabular
  - Pubis, Ilium and Ischium
53. T or F The cranial ventral Iliac spine is part of the tuber sacrale.
54. Which (of the following) muscle(s) inserts in the trochanteric fossa?
- Gemelli and internal obturator**
  - Deep and superficial gluteal
  - Rectus femoris
  - Vastus medialis
  - None of the above

55. The medial malleolus is found on the:
- Radius
  - Ulna
  - Fibula
  - Tibia**
  - Femur
56. T or F The fourth (IV) tarsal bone forms part of the distal intertarsal joint.
57. The Ortolani sign test is used in the examination of the:
- Stifle joint
  - Hip joint**
  - Tarsal joint
  - Hip and stifle joints
  - All the above
58. Which of the following is **NOT** a sign of a luxated hip?
- Non weight-bearing lameness
  - Outward rotation of the stifle
  - Positive thumb displacement test
  - Digits held under the body
  - All the above
59. T or F With the hip joints flexed, the limb with a luxated joint will be longer.
60. The RANGE OF MOTION of a dog's stifle is about:
- 110 degrees**
  - 90 degrees
  - 30 degrees
  - 50 degrees
  - 40 degrees
61. Without any restraining structures, how many planes (axes) of movement does a stifle joint have?
- 1
  - 2
  - 3**
  - 4
  - 5
62. Which of the following statements about the lateral collateral ligament in the stifle is **LEAST** accurate?
- Tense during extension of the joint
  - Not attached to the lateral meniscus
  - Tense during extension and flexion of the joint**
  - Tendon of the popliteal muscle lies between the lateral collateral ligament and the lateral meniscus
  - Does not prevent the cranial movement of the tibia relative to the femur

63. What happens when the stifle is flexed?
- There is twisting together of the cruciate ligaments
  - Loosening of the lateral collateral ligament
  - Internal rotation of the tibia
  - Tightening of the medial collateral ligament
  - All the above**
64. **T** or **F** The tendon of the long digital extensor muscle runs across the stifle joint.
65. **T** or **F** The semimembranosus muscle contributes to the formation of the calcaneal tendon in the dog.
66. Hypothetically, absence of blood in the corpus cavernosum penis may indicate blood flow problems in which of the following arteries?
- Deep artery of the penis**
  - Artery of the bulb of the penis
  - Superficial perineal
  - Dorsal artery of the penis
  - Cranial gluteal
67. Spermatozoa in the rete testis pass directly into the head of the epididymis through the:
- Straight tubules
  - Mediastinum testis
  - Efferent ductules**
  - Ampulla of the ductus deferens
  - Seminiferous tubules
68. The sympathetic division of the autonomic nervous system to the penis of the dog is responsible for:
- Ejaculation and prostate secretion**
  - Dilation of the penile arteries
  - Partial inhibition of venous blood drainage of the penis
  - Increase in penile blood pressure
  - Relaxation of the bulbospongiosus muscle
69. A transverse section through the root of the penis will show all the structures listed below with the **exception** of:
- Bulb of the penis
  - Urethra
  - Corpus spongiosum penis
  - Bulbus glandis**
  - Bulbospongiosus muscle
70. Which of the following structures is **Not** involved in testicular thermoregulation?
- Tunica dartos
  - Testicular artery
  - Pampiniform plexus of veins
  - Ductus deferens**
  - Cremaster muscle

71. The testicular bursa is lined by:
- (a) Parietal vaginal tunic
  - (b) Visceral vaginal tunic**
  - (c) External spermatic fascia
  - (d) Mesorchium
  - (e) Internal spermatic fascia
72. Which of the following structures does **NOT** participate in the formation of the partition between the two-scrotal sacs?
- (a) Tunica dartos
  - (b) Scrotal skin**
  - (c) Parietal vaginal tunic
  - (d) Internal spermatic fascia
  - (e) External spermatic fascia
73. The urethral groove of the os penis contains the urethra immediately surrounded by which one of the following erectile tissues?
- (a) Corpus spongiosum pars longa glandis
  - (b) Corpus spongiosum bulbus glandis
  - (c) Corpus spongiosum penis**
  - (d) Corpus cavernosum penis
  - (e) Both corpus spongiosum penis and corpus cavernosum penis
74. Which of the following is **NOT** part of the spermatic cord?
- (a) Mesorchium
  - (b) Mesoductus deferens
  - (c) Mesofuniculus
  - (d) Mesepididymis**
  - (e) Testicular artery
75. Which of the following nerves provides sensory innervation to the glans penis and prepuce?
- (a) Obturator
  - (b) Hypogastric
  - (c) Pudendal**
  - (d) Femoral
  - (e) Caudal gluteal

**MAKE SURE YOU HAVE BUBBLED IN A SINGLE CHOICE FOR EACH AND EVERY ANSWER 1-75 ON YOUR SCANTRON SHEET BEFORE TURNING IT IN. IT'S TOO LATE AFTERWARD.**

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**END OF EXAMINATION**  
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