

**STRUCTURAL BASIS OF MEDICAL PRACTICE
EXAMINATION II**

September 22, 2000

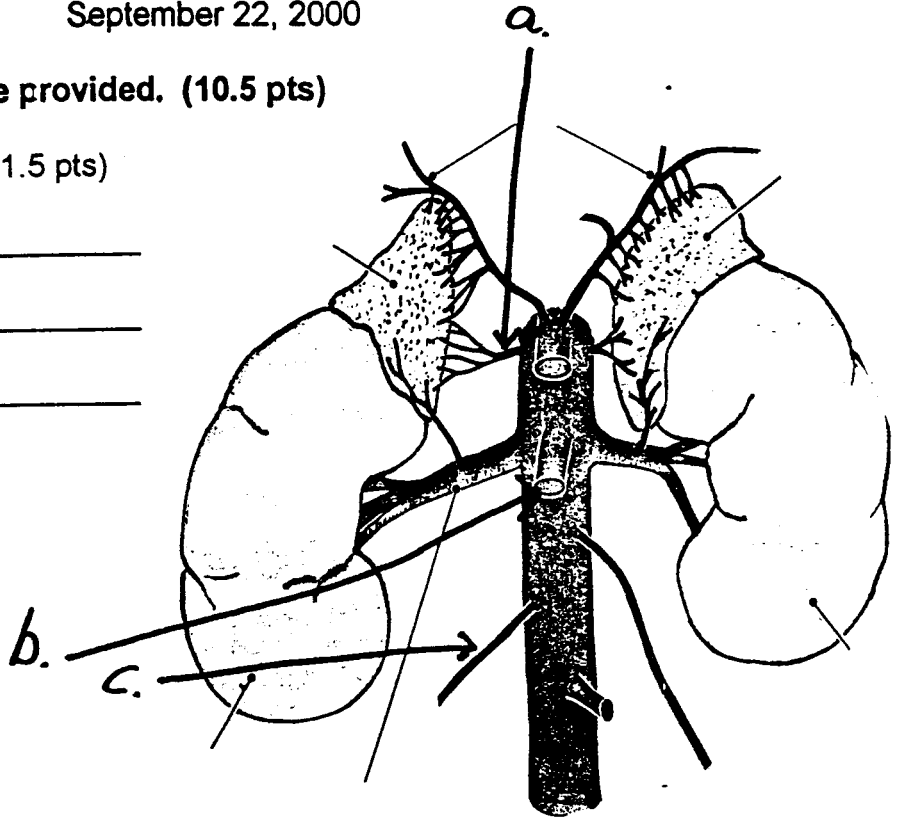
PART I. Answer in the space provided. (10.5 pts)

1. Identify the structures. (1.5 pts)

a. _____

b. _____

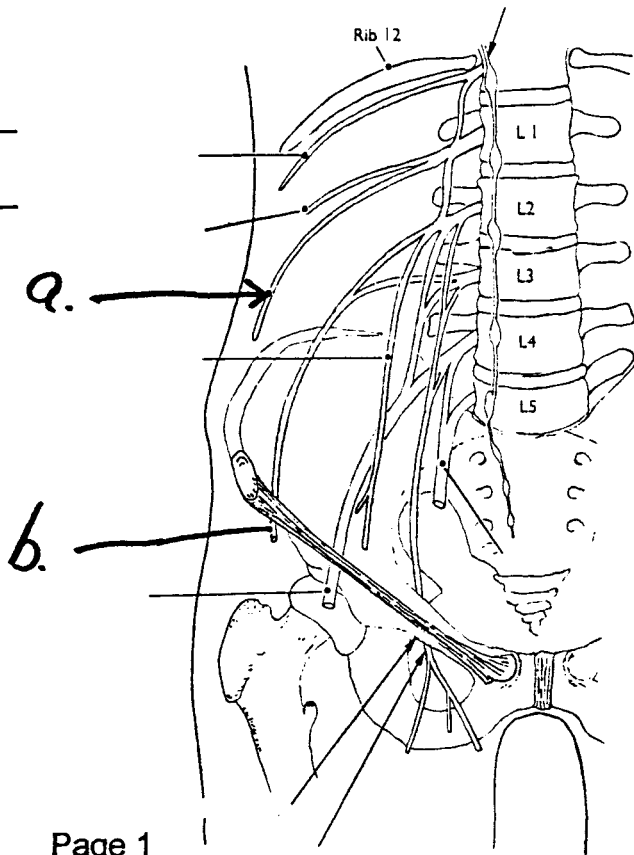
c. _____



2. Identify the structures. (1 pt)

a. _____

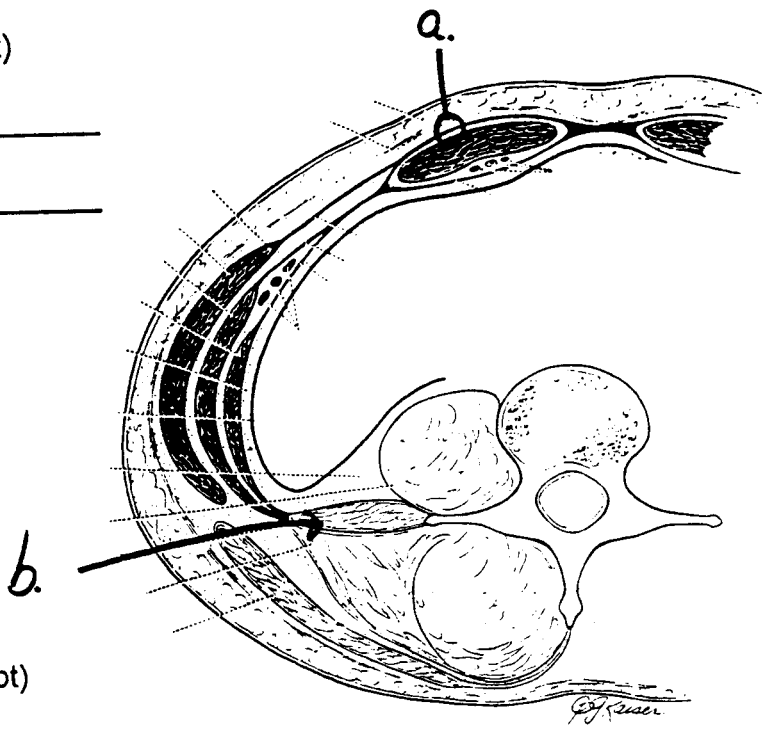
b. _____



3. Identify the structures. (1 pt)

a. _____

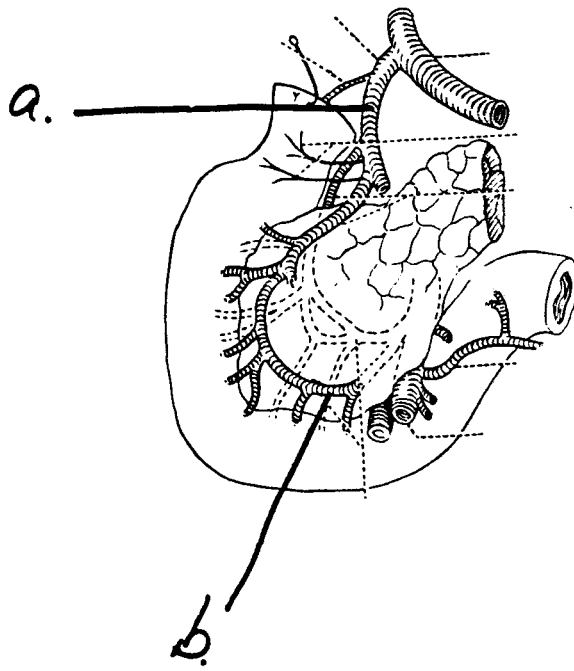
b. _____



4. Identify the structures. (1 pt)

a. _____

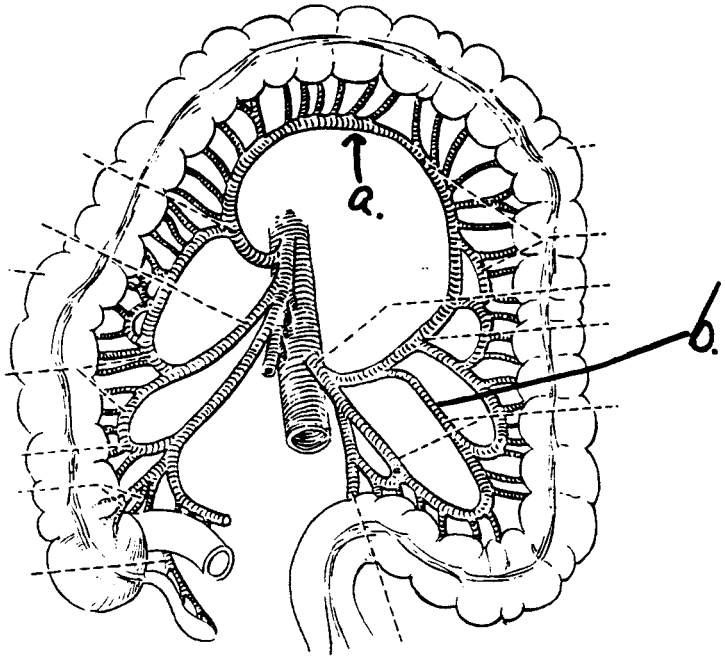
b. _____



5. Identify the structures. (1 pt)

a. _____

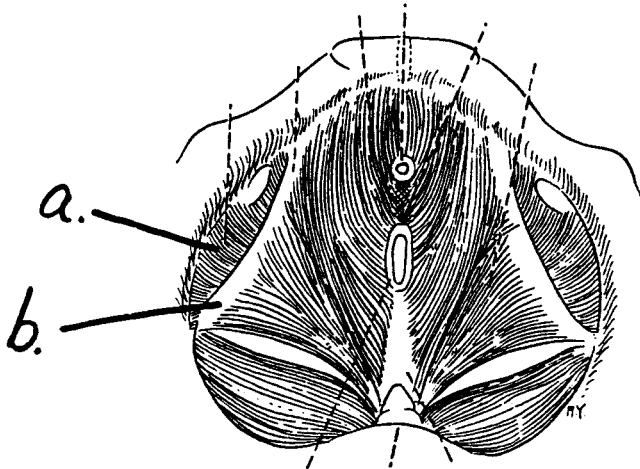
b. _____



6. Identify the structures. (1 pt)

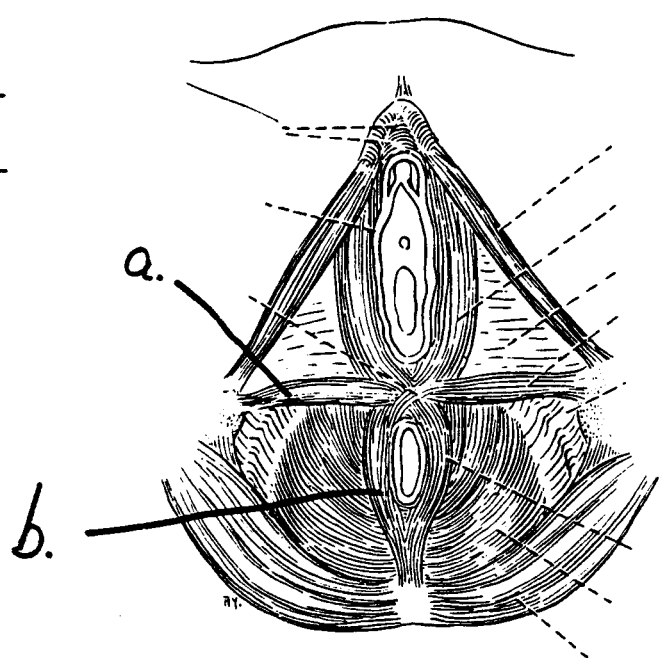
a. _____

b. _____



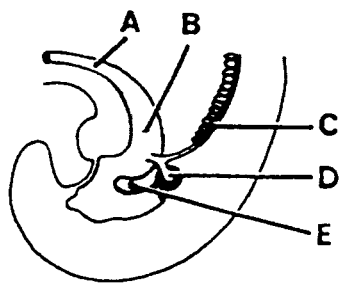
7. Identify the structures. (1 pt)

- a. _____
- b. _____



8. Select the letter(s) appropriate for the question. (1 pt)

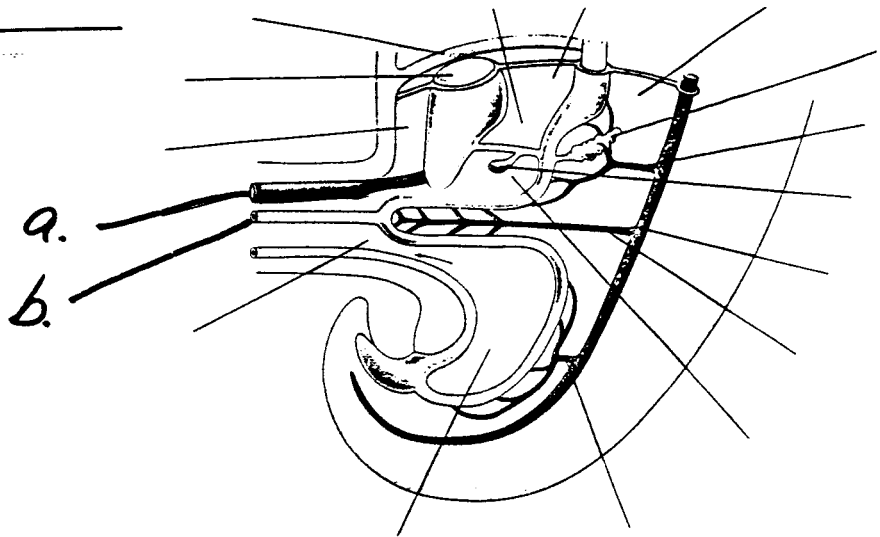
- a. ___ Urogenital sinus
- b. ___ Partitions the cloaca



9. Identify the structures. (1 pt)

a. _____

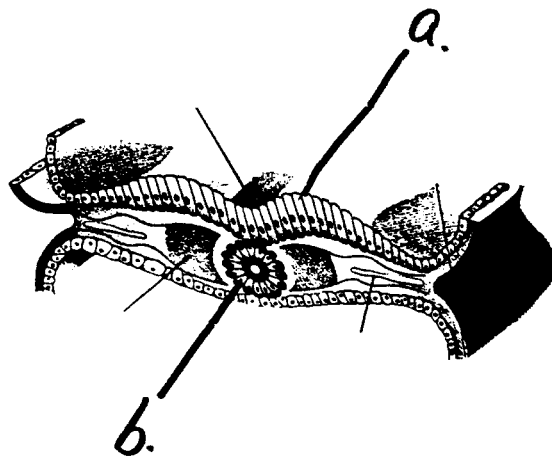
b. _____



10. Identify the structures. (1 pt)

a. _____

b. _____



Part II. Circle the one best answer. (3 pts)

1. The ventral mesentery of the foregut gives rise to which of the following except?
 - a. lesser omentum
 - b. hepatoduodenal ligament
 - c. falciform ligament
 - d. visceral peritoneum of the liver
 - e. gastrosplenic ligament

2. The paramesonephric ducts in female embryos give rise to the
 - a. paroophoron
 - b. uterine tubes
 - c. inferior part of the vagina
 - d. round ligament of the uterus
 - e. ovarian ligament

3. At birth, the caudal end of the spinal cord lies at the level of the ____ vertebra.
 - a. third sacral
 - b. first sacral
 - c. third lumbar
 - d. first lumbar
 - e. twelfth thoracic

Part III. Circle the correct answer. All, none, or some may apply. (34.5 pts)

1. With regard to the perineum and pelvis:
 - a. The puborectalis is smooth muscle.
 - b. The bulb of the vestibule is innervated by somatic afferent fibers.
 - c. The root of the clitoris is supported by the suspensory ligament.
 - d. The bulbourethral glands in the male are found in the deep perineal pouch.
 - e. The clitoris does not contain corpora cavernosa.

2. In the perineum and pelvis:
 - a. The arcus tendineus is formed by a thickening of the obturator internus fascia.
 - b. The pudendal canal is formed (in part) by a thickening of the obturator internus fascia.
 - c. There is no communication between the anterior recess and the posterior recess of the ischiorectal fossa.
 - d. The superficial and deep transverse perineus muscles constitute part of the U.G. diaphragm.
 - e. The internal anal sphincter muscle is innervated by somatic branches of the pudendal nerve.

3. With respect to fascia in the abdominopelvic region:
 - a. Parietal pelvic fascia is a condensation of the extraperitoneal connective tissue.
 - b. Perivisceral fascia is composed of transversalis fascia.
 - c. Renal fascia is derived from the extraperitoneal connective tissue.
 - d. The central tendon/perineal body is derived from parietal pelvic fascia.
 - e. The superior fascia of the pelvic diaphragm is an extension of the transversalis fascia into the pelvic cavity.

4. In regard to pelvic nerves and vessels:
 - a. The detrusor muscle has motor innervation from the parasympathetic nervous system.
 - b. The pelvic splanchnic nerves innervate erectile tissue and vasodilate the helicine arteries.
 - c. Peristaltic movements of the descending colon are stimulated by the lumbar splanchnic nerves.
 - d. Contraction of the fundiform muscle can help to expel urine from the urethra.
 - e. During urination the levator ani maintains contraction in order to maintain the flow of urine.

5. With respect to the nervous system:
 - a. The sympathetic trunk extends from the cervical region to the coccyx.
 - b. Pelvic splanchnic nerves synapse in the inferior hypogastric plexus.
 - c. Lumbar splanchnic nerves are postganglionic sympathetic fibers.
 - d. Pelvic splanchnic nerves follow the inferior mesenteric artery to innervate the descending colon.
 - e. The appendix has parasympathetic innervation from the vagus nerve.

6. With regard to the diaphragm:
 - a. The inferior fascia of the diaphragm is the parietal peritoneum.
 - b. The hiatus for the inferior vena cava is made of fibers from both the right and left crura.
 - c. The lateral lumbocostal arch (arcuate ligament) is a thickening of the fascia of the quadratus lumborum.
 - d. The lumbocostal trigone is a weakness in the structure of the diaphragm related to the lateral lumbocostal arch (lateral arcuate ligament).
 - e. The median arcuate ligament is located at the level of the 12th thoracic vertebrae.

7. In regard to the posterior abdominal wall and diaphragm:

- a. The thoracic duct passes through the diaphragm from abdomen to thorax at the level of T12.
- b. Pain from the periphery of the diaphragm may be referred to the neck and shoulder by way of the phrenic nerve.
- c. The left testicular vein drains into the left renal vein.
- d. The phrenic nerve passes through the diaphragm from thorax to abdomen by way of the esophageal hiatus.
- e. Branches of the aorta listed in order that they arise inferiorly from the diaphragm include: inferior phrenic - celiac - middle suprarenal - 1st lumbar.

8. With respect to the abdominal vasculature:

- a. The splenic artery passes through the lienorenal ligament.
- b. The proper hepatic artery is located in the hepatoduodenal ligament.
- c. The short gastric arteries pass through gastrosplenic ligament.
- d. The left gastric artery passes through the hepatogastric ligament.
- e. The sigmoid arteries pass through the mesentery.

9. With respect to the abdomen and pelvis:

- a. The cremaster muscle is innervated by the genitofemoral nerve.
- b. There is a superficial circumflex iliac vein but not a superficial circumflex iliac artery.
- c. The lacunar ligament is a derivative of the inguinal ligament.
- d. The ilioinguinal nerve traverses the deep and superficial inguinal rings.
- e. The anterior scrotal nerves are branches of the ilioinguinal nerve.

10. With respect to the pancreas:
- The base of the transverse mesocolon attaches across the head of the pancreas.
 - The body of the pancreas crosses the right kidney.
 - The opening of the accessory pancreatic duct lies superior to the opening of the chief pancreatic duct.
 - The uncinata process of the pancreas is derived from the ventral pancreas during embryology.
 - The great pancreatic artery supplies blood to the body of the pancreas.
11. In regard to the prostate:
- The prostatic utricle is located on the seminal colliculus.
 - The prostatic glands drain through a sinus located on the seminal colliculus.
 - The puboprostatic perivisceral fascia is in continuity with the puboprostatic ligaments.
 - The arterial supply to the prostate is by way of the superior vesical artery.
 - The prostatic venous plexus surrounds the prostate and lies deep to the capsule of the prostate.
12. With respect to the liver and gall bladder:
- The quadrate lobe lies between the inferior vena cava and the ligamentum venosum.
 - There is a renal impression of the kidney on the left lobe of the liver.
 - According to internal structure, the caudate lobe and the left portion of the quadrate lobe belong to the left lobe of the liver.
 - Hepatic veins are located in the porta hepatis.
 - The vagus serves as the parasympathetic innervation to the gall bladder.

13. In regard to the small and large intestine:
- a. The jejunum is longer than the ileum.
 - b. The vasa recta of the jejunum are longer than that in the ileum.
 - c. Anastomotic channels following the large intestine form the marginal artery (Artery of Drummond).
 - d. The large intestine is shorter in length than the jejunum or the ileum.
 - e. The appendix does not have teniae coli.
14. With respect to the abdomen:
- a. The inferior mesenteric vein drains into the splenic vein.
 - b. The portal vein courses through the hepatogastric ligament.
 - c. The ligamentum teres represents the obliterated left umbilical vein.
 - d. The ampulla of Vater is the termination of the bile duct and the chief pancreatic duct.

Part IV. Answer in the space provided (including the back of the page or additional pages for each question). (52 pts)

1. A 21-yr old male is admitted to the emergency room after falling astride of parallel bars in the gym. After examination you conclude that there is a tear in the spongy urethra and urine is extravasating. **Discuss the boundaries of Scarpa's fascia and its derivatives with respect to the containment of urine. Please specify the fascial layer(s) associated with the accumulation of urine. Please address whether urine will be in the ischiorectal fossa. (10 pts)**

2. In the course of the Whipple procedure, whereby carcinogenic pancreas is removed, the 3rd segment of the duodenum must be removed as well. **Discuss the anatomy of the 3rd (horizontal) segment of the duodenum and include the relationships (6 directions), boundaries, vertebral levels, structure, surfaces, vasculature, lymphatic drainage, and innervation. (10 pts)**

3. A teenage boy is diagnosed with metastatic cancer of the testis. Before operating, you review the gross anatomy of the testis. **In your review of the testis, please include the relationships, structure, coverings, vasculature, lymphatics, and innervation in your answer. (12 pts)**

4. A 55-yr old female is diagnosed with cancer in both ovaries. Prior to removal of the ovaries, you are asked to provide a comprehensive review of the ovary at Grand Rounds. **Discuss the anatomy of the ovary and include relationships (6 directions), structure, surfaces, supports, vasculature, innervation, and lymphatic drainage. (10 pts)**

5. A 45-yr old male with a history of ulcers presents to the emergency room with severe pain during mealtime. After appropriate tests you diagnose a perforated ulcer in the posterior wall of the stomach into the lesser sac. Before repair of this ulcerated region you are asked to review the anatomy of this region with the residents. **Discuss the anatomy of the lesser sac and include relationships (6 directions), boundaries, structures, surfaces, vasculature, innervation, and lymphatics. Explain why pain may originally be diffuse but suddenly becomes severe, and why debris from the stomach may be found in the hepatorenal recess. (10 pts).**