



AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF REHABILITATIVE MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY

END OF TRIMESTER EXAMINATIONS MAY TO AUGUST 2023

UNIT CODE: PHT 213

UNIT NAME: REGIONAL ANATOMY

DATE: 31 AUGUST 2023

START TIME: 9AM

FINISH TIME: 11AM

INSTRUCTIONS

- 1. All students will have hours to complete the examination**
- 2. Attempt all questions as per the instruction**
- 3. It is the student's responsibility to report any page and number missing in this paper.**
- 4. Check that the paper is complete**
- 5. Total number of pages is including the cover.**
- 6. Read through the paper quickly before you start.**

Section A (40 Multiple choice questions (40 marks)

1. A midline abdominal incision below the umbilicus passes through all the following except:
 - a) pyradmidalis
 - b) linea alba
 - c) extra peritoneal fat
 - d) transversalis fascia
 - e) Scarpa's fascia

2. The spleen:
 - a) has a lower pole which normally projects forward to the anterior axillary line
th th
 - b) lies between the 8 and 10 ribs
th
 - c) has a long axis lying in the line of the 9 rib
 - d) as it enlarges, glides in contact with the anterior abdominal wall in front of the splenic flexure of the colon
 - e) when palpable on abdominal examination, is identified by being resonant to percussion

3. A muscle which flexes both hip and knee joints is:- ?
 - a) Gluteus maximus
 - b) Biceps femoris
 - c) Rectus femoris
 - d) Sartorius
 - e) Hamstrings

4. The abdominal aorta:
 - a) passes into the abdomen behind the diaphragm at the level of the 10 thoracic vertebra
th
 - b) bifurcates at the level of the body of the 2 lumbar vertebra
nd
 - c) has a surface marking for its bifurcation as 2cm below and to the right of the umbilicus
 - d) gives rise to the coeliac artery at the level of the body of the 10 thoracic vertebra
th
 - e) has the renal arteries arising at the level of the body of the 1 lumbar vertebra
st

5. With regard to the spleen, which is NOT true?
- in splenomegaly, the splenic flexure of the colon lies superficial to its anterior border
 - its anterior border is notched
 - its medial relations include left kidney, lienorenal ligament, pancreas and lesser sac
 - it lies between the 9th and 11th ribs
 - accessory spleens occur in 10% of people
6. The ureter passes deep to the:
- femoral nerve
 - gonadal artery
 - psoas muscle
 - genitofemoral nerve
 - common iliac artery
7. With regard to the spleen, which is NOT true?
- it is in direct contact with the lesser sac
 - it projects into the greater sac
 - its anterior border is notched
 - it receives both sympathetic and parasympathetic supply
 - lymph drainage is via retropancreatic channels to the coeliac nodes
7. Regarding abdominal vascular anatomy, all of the following are true EXCEPT:
- the left renal vein lies under the superior mesenteric artery
 - the appendix is supplied by the ileo colic branch of the superior mesenteric artery
 - the left gastro epiploic artery is a branch of the splenic artery
 - the portal vein lies posterior to the pylorus
 - the duodenum receives no supply from the superior mesenteric artery
9. With regard to the ureter, which is NOT true?
- it is narrowed at its halfway mark
 - it crosses the genitofemoral nerve under cover of peritoneum
 - the upper part of the right ureter lies behind the duodenum
 - it lies just lateral to the tips of the transverse processes of L3-5
 - it is adherent to the peritoneum of the posterior abdominal wall
10. With regard to the female pelvis, which is NOT true?
- the cervix is separated from the rectum by the Pouch of Douglas
 - the cervix is separated from the bladder by the vesico-uterine pouch
 - the ureter passes 1-2cm lateral to the cervix
 - the ureter passes under both the broad ligament and the uterine artery
 - lymph drainage from the body of the uterus includes the inguinal nodes

11. The transversalis fascia contributes to which of the following structures on the anterior abdominal wall?
- superficial inguinal ring
 - deep inguinal ring
 - inguinal ligament
 - sac of an indirect inguinal hernia
 - anterior wall of the inguinal canal
12. Afferent pain fibres for the biliary tract:
- as far as known do not exist; pain sensation relates to inflamed overlying parietal peritoneum
 - run with the vagus nerve to the Nucleus of the Solitary Tract
 - may run with the right phrenic nerve
 - run with spinal nerves to T2-5
 - do not respond to distension of the viscus
13. With regard to the kidneys, which is NOT true?
- the renal nerves are from spinal segment T12-L1
 - at the hilum, the vein is anterior to the artery which is anterior to the ureter
 - in horseshoe kidneys, ureters pass behind the isthmus of the kidney substance
 - percutaneous renal biopsy is via a point 2.5cm below the 12th rib
 - renal fascia helps prevent spread of infection from perinephric abscesses
14. With regard to the urethra in the young adult male, which is NOT true?
- the prostatic urethra is narrower than the membranous urethra
 - it is approximately 20cm long
 - has a short dilated region just proximal to the external urethral meatus
 - it is horizontal in cross-section when empty
 - the bulbous part is part of the spongy urethra
15. Which of the following forms the posterior wall of the inguinal canal?
- conjoint tendon
 - internal oblique muscle
 - transversus abdominus muscle
 - lacunar ligament
 - external oblique muscle

16. A patient presents with a deep stab wound high up in the costovertebral angle beneath the 12th rib on the left side. The most likely internal injury is?
- laceration of the infra-renal aorta
 - laceration of the right renal vascular pedicle
 - puncture of the 3rd part of the duodenum
 - puncture of the 4th part of the duodenum
 - pneumothorax of the left lung
17. Concerning the abdominal aorta and branches:
- the inferior mesenteric artery arises below the L4 lumbar arteries
 - the superior mesenteric artery arises at the level of L2
 - the renal artery arises below the level of the superior mesenteric artery
 - the suprarenal arteries arise above the coeliac trunk
 - the coeliac trunk is the highest branch of the abdominal aorta
18. The relations of the 3rd part of the duodenum include:
- the hilum of the right kidney
 - the attachment of the transverse mesocolon
 - the inferior pole of the right kidney
 - the superior mesenteric vein
 - the portal vein
19. Which nerve passes through psoas muscle and emerges anteriorly to run down the front of the muscle?
- ilioinguinal
 - iliohypogastric
 - genitofemoral
 - lateral cutaneous nerve of the thigh
20. The trans pyloric plane of the abdomen (passing through the lower border of L1 vertebra) passes through:
- The spleen
 - the third part of the duodenum
 - the tail of the pancreas
 - the origin of the superior mesenteric artery
 - the fundus of the gallbladder

21. Regarding the kidneys:
- the right kidney lies at a lower level to the left kidney
 - they lie inferior to the pleura
 - the hilum of the left kidney is separated from the peritoneum by the duodenum
 - the renal fascia encloses the kidney and suprarenal gland within the same sheath
 - the renal pelvis is lined with columnar epithelium
22. Regarding the ureters, which is INCORRECT?
- the line of projection of the ureter on a radiograph is medial to the tips of the transverse processes of the lumbar vertebrae and crosses the pelvic brim at the sacroiliac joint
 - they exhibit peristaltic activity when stimulated
 - they are lined by transitional epithelium with a thick muscularis mucosae
 - they are supplied with sympathetic fibres from T11-L2
 - they are crossed superficially by the gonadal vessels
23. Regarding the inguinal canal:
- the deep inguinal ring lies 1cm above and at the junction of the lateral third and medial two thirds of the inguinal ligament
 - the deep inguinal ring is formed by an opening in the transversalis fascia
 - an indirect inguinal hernia bulges into the inguinal triangle, posterior to the canal and medial to the inferior epigastric artery
 - contains the spermatic cord that has two fascial layers/coverings and eight contents
24. Which structure does not enter the inguinal canal through the deep inguinal ring?
- testicular artery
 - vas deferens
 - ilioinguinal nerve
 - genital branch of genitofemoral nerve
 - artery to the vas deferens
25. The testicular blood supply:
- is mainly from the ductal artery
 - the right drains directly into the inferior vena cava
 - venous drainage does not have valves
 - a varicocele is more common on the right than the left
26. Nerves of pelvis, branches of sacral plexus include all except:
- nerves to piriformis
 - pelvis splanchnic nerve
 - obturator nerve
 - pudendal nerve
 - posterior femoral cutaneous nerve

27. Regarding potential spaces in the abdomen:
- the entrance to the lesser sac is inferiorly via the transverse mesocolon foramen
 - the right hepatorenal pouch is the lowest lying region of the peritoneal cavity in the supine position (excluding pelvis)
 - the peritoneal cavity is divided into supracolic and infracolic by the epiploic foramen
 - the root of the mesentery of the small intestine is a small 2cm area at the duodenojejunal junction
28. The inferior mesenteric artery arises:
- at L3
 - behind the inferior border of the third part of the duodenum
 - at the level of the umbilicus
 - 3-4cm above the aortic bifurcation
 - all of the above
29. The nerve supply to the stomach:
- the anterior vagal trunk alone controls the pyloric sphincter
 - the posterior vagal trunk alone controls the pyloric sphincter
 - secretion is controlled by sympathetic supply
 - the posterior vagal trunk is in contact with the left side of the oesophagus
30. The liver:
- lies from the 7th to the 11th left ribs along the midaxillary line
 - is normally completely under the costal margin
 - the upper margin is the 4th costal cartilage
 - blood supply divides into left and right supplying the lobes as divided by the falciform ligament
31. The following receive innervation from the branches of the pudendal nerve;
- Labia minora
 - Urethral sphincter
 - Posterior fornix of the vagina
 - ischio-cavernosus muscle
 - skin of the penis or clitoris
32. The primary support for the uterus is derived from:
- Lateral transverse cervical ligament
 - Pubic cervicle ligaments
 - Sacro cervicle ligament
 - round ligaments of the uterus
 - Broad ligament

33. The ejaculatory ducts:
- a) are formed by the union of the prostatic ducts and the ducts of the seminal vesicle
 - b) lie on the superior surface of the bladder
 - c) open into the membranous urethra
 - d) contract with parasympathetic stimulation
 - e) have none of the above properties

34. The following statements concerning the female urethra are true except:

- a) It lies immediately anterior to the vagina
- b) Its external orifice lies about 2 inches (5 cm) from the clitoris
- c) It's about 1.5 inches (3.7 cm) long
- d) It pierces urogenital diaphragm
- e) It is straight and only minor resistance is felt as a catheter is passed through the urethral sphincter

35. The following structures can be palpated through a vaginal examination:

- a) Sigmoid colon
- b) Ureters
- c) Perineal body
- d) Ischial spines
- e) Ileopectineal line

36. The following statements concerning ischiorectal fossa are true except:

- a) The pudendal nerve lies in its lateral wall
- b) The floor is formed by the superficial fascia and skin
- c) The lateral wall is formed by the obturator internus muscle and its fascia
- d) The medial wall is formed in part by the levator ani and muscle
- e) The roof is formed by urogenital diaphragm

37. The following statements concerning the main venous drainage of the pelvis structure are true except:

- a) The venous blood from the left ovary drains into the inferior vena cava
- b) The venous blood from the prostate drains into the internal iliac veins
- c) The venous blood from the urinary bladder drains into the internal veins
- d) The venous blood from the mucous membrane of the rectum drains into the superior rectal vein
- e) The venous drainage of the seminal vesicle drains into the internal iliac veins

38. The following statement concerning the lymphatic drainage of the pelvis structure are correct except:

- a) Lymph from the cervix of the uterus drains into the internal and external iliac lymph nodes
- b) Lymph from the prostate drains into the external iliac lymph nodes
- c) Lymph from the posterior fornix of the vagina drains into the internal and external iliac lymph nodes
- d) Lymph from the trigone of the bladder drains into the internal and external iliac lymph nodes
- e) Lymph from fundus of the uterus drains into the para aortic lymph nodes at the level of the lumbar vertebrae

39. Concerning the visceral layer of the pelvic fascia in the female, the following are true except:

- a) In the region of the cervix of the uterus, it is called parametrium
- b) It is condensed to form pubo cervical, transverse cervical and sacro cervical ligaments of the uterus
- c) It covers the obturator internus muscle
- d) On the lateral wall of the pelvis, it fuses with the parietal layer of the pelvic fascia
- e) It does not become continuous above with the fascia transversalis

40. Concerning the vas deferens, all of the following statements are true except:

- a) It emerges from the deep inguinal ring and passes around the lateral margin of the inferior epigastric artery
- b) It cross the ureter in the region of the ischial spine
- c) The terminal part is dilated to form ampulla
- d) It lies on the posterior part of the prostate but is separated from it by peritoneum
- e) It joins the duct of the seminal vesicle to form the ejaculation duct

Section B -Short structured questions

1. Describe the pelvic girdle (5marks)
2. Describe the regions of the abdomen (5marks)

Section C –Long structured questions

1. Explain the perennial body muscles (10 Marks)
2. Describe the major organs within the abdomen (10 marks)