PELVIS AND PERINEUM

M.C.Q's

Choose only one answer (most appropriate):

1- Regarding the uterus, all the following statements are correct, except:

A. It is anteverted anteflexed.
B. The relative length of the body to the cervix in the adult female is 2/1.
C. The lymph vessels from the fundus accompany the ovarian arteries.
D. The round ligament of the uterus elevates a fold on the upper surface of the broad ligament.
E. The ureters are closely related to the sides of the body of uterus.

2- Regarding the vagina, all the following statements are correct, except:

A. The posterior fornix is the deepest one.
B. The posterior wall is longer than the anterior wall.
C. It is related anteriorly to the base of the urinary bladder and the urethra.
D. Pelvic abscess may be drained through a needle inserted through the upper part of the anterior wall of the vagina.
E. The upper part of the posterior wall of the vagina is covered by peritoneum.

3- Which one of the following nerves is not a branch of the sacral plexus?

A. Inferior gluteal nerve.
B. Superior gluteal nerve.
C. Pudendal nerve.
D. Obturator nerve
E. Posterior cutaneous nerve of the thigh.

4- All the following arteries are branches of the internal pudendal artery, except:

A. Dorsal artery of the penis.
B. Deep artery of the penis.
C. Perineal artery.
D. Inferior rectal artery.
E. Superior rectal artery.

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5- When performing surgery in the ischiorectal fossa, the internal pudendal vessels and pudendal nerve should be avoided by staying away from the:

A. base of the fossa
B. medial wall of the fossa
C. lateral wall of the fossa
D. anterior wall of the fossa
E. posterior wall of the fossa

6- Infected glands of the anus (near the pectinate line) may erode the wall of the anal canal and rupture laterally into the:

A. ischiorectal fossa
B. deep perineal pouch (or space)
C. rectovesical fossa
D. superficial perineal pouch (or space)
E. retropubic space

7- The perineum is bounded by all of the following structures, except:

A. ischiopubic ramus
B. pubic symphysis
C. apex of the coccyx
D. urogenital diaphragm
E. sacrotuberous ligament

8- The portion of the male urethra that passes through the urogenital diaphragm is called the:

A. penile urethra
B. spongy urethra
C. membranous urethra
D. prostatic urethra
E. external urethral sphincter

9- The scrotum has as its counterpart in the female the:

A. bulb of the vestibule
B. crura of the clitoris
C. labia majora
D. labia minora
E. clitoris

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10- When a surgeon removes the uterus and cuts the uterine artery, he must be careful not to injure the:

A. ovarian artery
B. ureter
C. urethra
D. internal pudendal artery
E. vagina

11- The portion of the broad ligament of the uterus that is attached to the uterine tube is known as the:

A. round ligament
B. mesovarium
C. mesometrium
D. mesosalpinx
E. parametrium

12- The deep perineal pouch in the male contains the following, except:

A. Sphincter urethrae muscle.
B. Ischiocavernosus muscle.
C. Deep transverse perineal muscle.
D. Bulbourethral glands.
E. Dorsal nerve of the penis.

13- The medial wall of the ischiorectal fossa is formed by which of the following?

A. obturator fascia
B. urogenital diaphragm
C. levator ani and external anal sphincter
D. obturator internus muscle
E. levator ani and obturator fascia

14- Lymphatic vessels from the anal canal, below the pectinate line, drain into which lymph nodes?

A- para-aortic
B- superior mesenteric
C- internal iliac
D- superficial inguinal
E- inferior mesenteric

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15- The ischiocavernosus muscle is found in the:

A. true pelvis
B. superficial perineal space
C. deep perineal space
D. ischiorectal fossa
E. around the bulb of the penis

16- The broad ligament of the uterus is a double layer of peritoneum which encloses all of the following structures except:

A. ovary
B. ovarian ligament
C. uterine tube
D. round ligament of uterus
E. uterine artery

17- The superior and inferior gluteal arteries arise from the:

A. superior rectal artery
B. common iliac artery
C. inferior epigastric artery
D. internal iliac artery
E. median sacral artery

18- The internal iliac artery give rise to all of the following branches except

A. superior gluteal
B. middle rectal
C. superior vesical
D. internal pudendal
E. ovarian

19- In the male, the penile urethra is one of the following parts:

A. is that part within the prostate gland
B. starts at the trigone of the bladder
C. is that part within the urogenital diaphragm
D. is that part within the corpus spongiosum
E. is called the ejaculatory duct

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20- In the male, during a rectal examination, each of these structures can be palpated (felt) except:

A. prostate
B. sacrum
C. ductus deferens
D. coccyx
E. ischial tuberosity

21- The lateral wall of the ischiorectal fossa is the:

A. levator ani muscle
B. external anal sphincter
C. internal anal sphincter
D. obturator internus muscle
E. obturator externus muscle

22- The pelvic diaphragm separates the:

A. true pelvis from the false pelvis
B. lesser and greater sciatic notches
C. perineum from the ischiorectal fossa
D. deep perineal pouch from the superficial perineal pouch
E. pelvis from the perineum

23- Which of the following leaves the pelvis by passing through the lesser sciatic foramen?

A. piriformis muscle
B. pubococcygeus muscle
C. obturator internus tendon
D. inferior gluteal nerve
E. iliacus muscle

24- Each of the following crosses the pelvic brim, except:

A. vas deferens
B. uterine artery
C. ureters
D. median sacral artery
E. internal iliac artery

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25- All the following structures are present in the superficial perineal pouch in the female, except:

A. Labial arteries.
B. Deep arteries of the clitoris.
C. Bartholin glands.
D. Bulbourethral glands.
E. Paraurethral glands.

26- Which one of the following structures is not present in the deep perineal pouch in the male?

A. External urethral sphincter.
B. Internal pudendal artery.
C. Bulb of the penis.
D. Membranous urethra.
E. Bulbourethral glands.

27- Regarding the anal canal, all the following statements are correct, except:

A. Lymphatics from the lower half of the canal are drained into the superficial inguinal lymph nodes.
B. The internal anal sphincter is supplied by the inferior rectal nerve.
C. The anal columns of Morgagni are caused by the branches of the superior rectal artery.
D. It is related on each side to an ischiorectal fossa.
E. The internal hemorrhoids are painless.

28- Which one of the following arteries is a parietal branch of the internal iliac artery?

A. Umbilical artery.
B. Internal pudendal artery.
C. Inferior vesical artery.
D. Middle rectal artery.
E. Iliolumbar artery.

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29- Regarding the prostate, all the following statements are true, except:

A. The infero-lateral surface is related to levator ani.
B. The veins of Bateson connect the prostatic venous plexus with the internal vertebral venous plexus.
C. The prostatic venous plexus receives the deep dorsal vein of the penis.
D. The posterior surface is related to the anal canal.
E. The ejaculatory ducts pierce the base of the gland.

30- Regarding the levator ani muscle, all the following statements are correct except

A. In the female, the anterior part of the muscle forms a sphincter around the vagina.
B. The puborectalis part of the muscle acts as an additional anal sphincter.
C. It is supplied by the inferior rectal nerve through its pelvic surface.
D. It shares in the medial wall of the ischiorectal fossa.
E. Its posterior border is related to the coccygeus muscle.

31- Regarding the prostatic urethra, the following statements are correct, except:

A. It continues directly into the membranous urethra.
B. It is the widest part of male urethra.
C. Its posterior wall has the urethral crest.
D. Its anterior wall has the opening of prostatic utricle.
E. It receives the openings of the ejaculatory ducts.

32- Lymph vessels of the rectum drain into which one of the following group of lymph nodes?

A. Superior mesenteric.
B. Inferior mesenteric and internal iliac.
C. External iliac.
D. Superficial and deep inguinal lymph.
E. Paraaortic.

33- The following statements regarding the prostate are correct, except:

A. Its apex lies on the urogenital diaphragm.
B. Its anterior lobe is devoid of glandular tissue.
C. Its median lobe is rich in glands.
D. Its lateral surfaces are related to the levator ani muscles.
E. Prostatic venous plexus is drained into the external iliac vein.

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34- Regarding the rectum, all the following statements are correct except

A. The largest crescentic transverse fold of the rectum is found just above the ampulla.
B. The inferior rectal arteries do not share in the arterial supply of the rectum.
C. The fascia of Waldeyer is a condensation of visceral pelvic fascia around the middle rectal arteries.
D. The upper 2/3 of the anterior surface of the rectum is covered by peritoneum.
E. The rectum is about 12 cm long.

35- Regarding the urinary bladder, all the following statements are correct, except:

A. The puboprostatic ligaments are attached to the anterior surface of the neck of the bladder.
B. The trigone is mesodermal in origin.
C. The median umbilical ligament is the obliterated urachus.
D. Contraction of Detruser muscle is stimulated by somatic nerve.
E. In the young child, the empty bladder lies in the pelvis.

36- Regarding the uterus, all the following statements are correct, except:

A. It is normally anteverted anteflexed.
B. The anterior wall of the cervix is covered with peritoneum.
C. The uterine artery takes a tortuous course inside the broad ligament.
D. The uterine artery crosses the ureter at the root of the broad ligament.
E. The uterine artery gives branches to the vagina and the Fallopian tube.

37- Using a cystoscope, the trigone of the urinary bladder shows the following features, except:

A- It is pink and smooth.
B- Its superior angles correspond to the urachus.
C- Its inferior angle corresponds to the urachus.
D- It is limited superiorly by the inter-ureteric ridge.
E- The uvula vesicae is produced by the median lobe of the prostate.

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38- Regarding the prostate, choose the incorrect statement:

A- Its base is continuous with the neck of the bladder.

B- Its apex lies on the upper surface of urogenital diaphragm.

C- Its posterior surface is related to the ampulla of rectum.

D- Benign enlargement commonly involves the posterior lobe of the prostate.

E- Prostatic venous plexus drains into internal iliac veins.

39- The following structures could be palpated by rectal examination in the male except:

A- Seminal vesicles

B- Prostate

C- Bulb of penis

D- Ureters

E- Urogenital diaphragm

40- The following structures could be palpated by rectal examination in the female except:

A- Recto-uterine pouch.

B- Urinary bladder.

C- vagina.

D- Cervix.

E- Sacrum.

41- The following are sites of anatomical narrowing of the ureter were urinary calculi may be arrested except:

A- Where the renal pelvis joins the ureter.

B- As it crosses the sacroiliac joint.

C- As it pierces the bladder wall.

D- As it crosses lumbosacral joint.

E- As it crosses the Ischial spine.

42- The Ureters may be supplied by branches from the following arteries, except:

A- Renal.

B- Testicular or ovarian.

C- Superior vesical.

D- Inferior mesenteric.

E- Common iliac.

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43- All of the following parts are covered by peritoneum except:

A- Posterior fornix of vagina.
B- Anterior fornix of vagina.
C- Fallopian tube.
D- Superior surface of urinary bladder.
E- Upper third of rectum.

44- The lymphatics of the ovary drain primarily into the:

A- Internal iliac lymph nodes.
B- External iliac lymph nodes.
C- Common iliac lymph nodes.
D- Superficial inguinal lymph nodes.
E- Para-aortic lymph nodes.

45- Regarding the vas deferens; choose the incorrect statement:

A- It passes through the inguinal canal.
B- Its lateral to inferior epigastric artery at the deep inguinal ring.
C- Crosses the ureter in the region of Ischial spine.
D- Lies lateral to the seminal vesicles on the back of urinary bladder.
E- Its terminal part dilates to form the ampulla of vas deferens.

46- External hemorrhoids means:

A- Varicosities of tributaries of superior rectal veins covered with mucous membrane.
B- Varicosities of tributaries of inferior rectal veins covered with skin.
C- Tear in the anal valves down to the anus.
D- An abscess in sub mucosa of anal canal.
E- None of the above.

47- The lower half of the anal canal shows the following features except:

A- Lined by stratified squamous epithelium.
B- Sensitive to pain and touch.
C- Shows anal columns.
D- Supplied by the inferior rectal artery.
E- Its lymphatic vessels drain into superficial inguinal lymph nodes.

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48- Regarding the prostate gland, choose the incorrect statement:

A- Its base is continuous with the neck of the urinary bladder.

B- Its apex lies on the upper surface of the urogenital diaphragm.

C- Its posterior surface is related to the ampulla of rectum.

D- The ejaculatory ducts open on to the anterior wall of the prostatic urethra.

E- Prostatic venous plexus drains into the internal iliac veins.

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KEY ANSWERS OF MCQ's

Number	Answer	Number	Answer
1	E	25	D
2	D	26	C
3	D	27	B
4	E	28	E
5	C	29	D
6	A	30	C
7	D	31	D
8	C	32	B
9	C	33	E
10	B	34	B
11	C	35	D
12	B	36	B
13	C	37	B
14	D	38	D
15	B	39	D
16	A	40	B
17	D	41	D
18	E	42	C
19	D	43	B
20	C	44	E
21	D	45	D
22	E	46	B
23	C	47	C
24	B	48	D

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FILL IN THE BLANKS

1- Among the contents of the sacral canal are ..... and .....
2- Antero-posterior diameter of the pelvic inlet is the distance from .....to.....
3- Antero-posterior diameter of the pelvic outlet is the distance From.....to.....
4- Upper surface of levator ani muscle is supplied by.....nerve, while its lower surface is supplied by.....nerve.
5- the internal iliac artery begins anterior to.....joint, and ends at upper part of.....
6- Two parietal branches of internal iliac artery are .....and.....
7- Two visceral branches of internal iliac artery are.....and.....
8- In males, perineal body separates the anal canal from....., while in females it separates the anal canal from.....
9- The upper part of anal canal is lined with....., while its lower most part is lined with .....
10- The medial wall of ischio-rectal fossa is formed by.....and.....
11- Among the muscles of superficial perineal pouch are.....and.....
12- Two muscles in the deep perineal pouch are.....and.....
13- The posterior surface of prostate is related to.....,while its infero-lateral surfaces are related to .....
14- The prostatic venous plexus drains into.....vein, and is connected to the .....venous plexus.
15- The right ovarian vein ends in.....while the left ovarian vein ends in .....
16- Ovarian artery is a branch of .....and lymph from the ovary is drained into.....
17- The body of the uterus is related posteriorly to.....pouch and is related anteriorly to.....pouch.
18- The arteries supplying the vagina forms the anterior and posterior....., while the vaginal vein ends in the.....
19- Muscles in the bed of the rectum are ---------- and ----------.
20- The rectum starts opposite ---------- and ----------.
21- Arterial supply of the rectum is ---------- and ----------.

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Answers of fill in the blanks

1. cauda equine - filum terminale.
2. upper border of symphysis pubis - sacral promontory.
3. lower edge of symphysis pubis - tip of coccyx.
4. S4 - inferior rectal.
5. sacro - iliac joint- greater sciatic foramen
6. obturator – inferior gluteal.
7. superior vesical – middle rectal.
8. membranous urethra and bulb of penis – lower 1/3 of vagina.
9. mucous membrane (or columnar epithelium) – skin.
10. levator ani muscle – external anal sphincter.
11. bulbospongiosus – ischiocavernosus – superficial transversus perinei.
12. deep transversus perinei – sphincter urethrae.
13. ampulla of rectum – levator ani muscle.
14. internal iliac vein – internal vertebral.
15. I. V. C. – left renal vein.
16. abdominal aorta – para-aortic lymph nodes.
17. douglas – utero – vesical.
18. azygos arteries – internal iliac vein.
19. piriformis - levator ani and coccygeus.
20. 3rd piece of sacrum - one inch in front of tip of coccyx.
21. superior rectal and middle rectal arteries and median sacral artery.

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CROSS MATCHING

1- Match each of the following muscles in column (A) with its nerve supply in column (B):

(A)	(B)
1- Lower surface of levator ani	a- perineal branch of pudendal nerve
2- Obturator internus	b- sacral 3, 4 nerves
3- Internal anal sphincter	c- L 4, 5, S1 nerves
4- Coccygeus	d- lumbar nerves
5- - Superficial perineal muscles	e- inferior rectal nerve
	f- inferior hypogastric plexus

2- Match each of the following arteries in column (A) with its origin in column (B):

(A)	(B)
1- Ovarian	a- internal pudendal artery
2- Uterine	b- abdominal aorta
3- Inferior rectal	c- posterior division of internal iliac artery
4- Superior rectal	d- common iliac artery
5- Superior gluteal	e- anterior division of internal iliac artery
	f- inferior mesenteric artery

3- Match each of the following structures in column (A) with its suitable lymphatic drainage in column (B):

(A)	(B)
1- Rectum	a- para- aortic lymph nodes
2- Lower part of anal canal	b- internal iliac lymph nodes
3-Testis	c- inferior mesenteric &internal lymph nodes
4- Prostate	d- external iliac lymph nodes
5-Body of uterus(lower part)	e- superficial inguinal lymph nods

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4- Match each of the following organs in column (A) with its suitable venous drainage in column (B):

(A)	(B)
1- Left ovary	a- inferior vena cava
2- Skin of penis	b- internal iliac vein
3- Right testis	c- left renal vein
4- - Prostate	d- inferior mesenteric vein
5- Upper part of anal canal	e- great saphenous vein

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KEY ANSWERS FOR CROSS MATCHING

1-

1	e
2	d
3	f
4	b
5	a

2-

1	b
2	e
3	a
4	f
5	c

3-

1	c
2	e
3	a
4	b
5	d

4-

1	c
2	e
3	a
4	b
5	d

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PROBLEM SOLVING

Problem (1):

A- 65- years-old man was admitted to the hospital complaining of severe difficulty in micturition the condition was diagnosed as benign hypertrophy of the prostate.

A- What is the cause of difficult micturition?

B- Name the lobes of the prostate.

C- Name two arteries supplying the prostate.

D- Name two structures within the prostate.

E- Mention communications of prostatic venous plexus.

Answers:

A- Enlarged median lobe obstructs the internal urethral orifice.

B- One median and two lateral lobes.

C- Inferior vesical and internal pudendal.

D- Prostatic urethra and 2 ejaculatory ducts.

E- Deep dorsal vein of penis and vertebral venous plexus.

Problem (2):

A 57-years-old woman with a history of chronic anal fissure visited the physician complaining of a painful swelling beside the anal orifice. A diagnosis of ischio- rectal abscess was made.

A- What is the cause of the abscess?

B- What are structures that may be damaged by surgical incision of the abscess?

C- Mention the medial boundary of ischio- rectal fossa.

D- Mention the lateral boundary of ischio rectal fossa.

E- Why is the anal fissure painful?

Answers:

A- Spread from infected anal fissure.

B- Inferior rectal nerve and vessels.

C- Levator ani and external anal sphincter.

D- Obturator internus muscle and fascia.

E- Because it is in the lower sensitive part of anal canal which is supplied by somatic nerve.

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