UGS Past Papers 2023 Batch

EXAM PRACTICE QUESTIONS

UNIVERSITY OF JORDAN – FACULTY OF MEDICINE

DON’T FORGET ME FROM YOUR DUAA :)

Which muscle inserts into the anococcygeal body only?

A Puborectalis

B Pubococcygeus

C Iliococcygeus

D Ischiococcygeus

Answer: A. Puborectalis

What is the diameter of the obstetric conjugate?

A 8-9 cm

B 10-10.5 cm

C 11-12 cm

D 13 cm

Answer: B. 10-10.5 cm | The obstetric conjugate is the shortest AP diameter of the pelvic inlet (~10-10.5 cm), the most clinically important diameter for vaginal delivery.

A woman develops urinary stress incontinence following surgical repair of a large mass in the anterior wall of the vagina. What was the most likely diagnosis of the original mass?

A Rectocele

B Enterocele

C Cystocele

D Urethrocele

Answer: C. Cystocele | A cystocele is a herniation of the bladder into the anterior vaginal wall; repair can disrupt the urethrovesical angle, causing stress incontinence.

A patient who previously underwent severe weight loss presents with flank pain, no hematuria, and relief of symptoms when lying down. What is the most likely diagnosis?

A Renal calculus

B Pyelonephritis

C Nephroptosis

D Hydronephrosis

Answer: C. Nephroptosis | Nephroptosis classically presents with flank pain that worsens upright and resolves lying down, due to kinking of the ureter/renal vessels.

Which nerve supply is responsible for erection of the penis?

A Somatic (pudendal nerve)

B Sympathetic (hypogastric nerve)

C Parasympathetic (pelvic splanchnic nerves)

D Genitofemoral nerve

Answer: C. Parasympathetic (pelvic splanchnic nerves) | Erection is mediated by parasympathetic fibers (S2-S4, pelvic splanchnic nerves), causing vasodilation of helicine arteries via NO release.

A male patient presents with painless swelling of the testis. Transillumination reveals a clear fluid-filled sac surrounding the testis. What is the most likely diagnosis?

A Varicocele

B Epididymo-orchitis

C Hydrocele

D Testicular torsion

Answer: C. Hydrocele | A hydrocele is fluid collection between the parietal and visceral layers of the tunica vaginalis; it transilluminates brilliantly and is painless.

Which structure forms the most important anterior relation of the left ureter in the abdomen?

A Ileocolic artery

B Right colic artery

C Sigmoid colon

D Descending colon

Answer: C. Sigmoid colon | The left ureter is crossed anteriorly by the sigmoid colon and its mesentery, a key surgical landmark to avoid ureteric injury in sigmoid colectomy.

Which sphincter prevents reflux of semen into the urinary bladder during ejaculation?

A External urethral sphincter

B Internal anal sphincter

C Preprostatic sphincter

D Membranous urethral sphincter

Answer: C. Preprostatic sphincter | The preprostatic sphincter contracts during ejaculation, sealing the bladder neck and preventing retrograde flow of semen into the bladder.

The lateral ligaments of the urinary bladder are best described as structures that:

A Contain the ureters and lymphatics

B Contain arteries and nerves

C Attach the bladder to the pubic symphysis

D Contain the vas deferens and seminal vesicles

Answer: B. Contain arteries and nerves | The lateral ligaments are pelvic fascia condensations carrying the vesical neurovascular bundle, including branches of the internal iliac artery and autonomic nerves.

The 'umbrella cells' seen on histological examination are characteristic of which type of epithelium?

A Simple cuboidal epithelium

B Pseudostratified columnar epithelium

C Stratified squamous epithelium

D Urothelium (transitional epithelium)

Answer: D. Urothelium (transitional epithelium) | Umbrella cells are large dome-shaped superficial cells unique to urothelium, allowing distension and acting as a permeability barrier.

Which of the following statements is true regarding minimal change disease?

A It is the most common cause of nephrotic syndrome in adults

B It is associated with subepithelial immune deposits on EM

C It is the most common cause of nephrotic syndrome in children

D It characteristically causes hematuria and hypertension

Answer: C. It is the most common cause of nephrotic syndrome in children | Minimal change disease accounts for ~80-90% of pediatric nephrotic syndrome; EM shows diffuse podocyte foot process effacement with no immune deposits.

Which of the following is correct regarding chronic drug-induced tubulointerstitial nephritis (TIN)?

A It is associated with IgE elevation and fever

B It resolves immediately when the offending drug is stopped

C It presents with insidious, progressive renal impairment

D It is characterized by eosinophiluria and rash

Answer: C. It presents with insidious, progressive renal impairment | Chronic drug-induced TIN develops insidiously over months to years without the hypersensitivity triad seen in acute TIN, leading to progressive CKD.

Which of the following correctly describes Gleason Grade 5 prostate carcinoma?

A Well-differentiated glands with minimal nuclear atypia

B Adenocarcinoma with areas of squamous metaplasia

C Carcinoma with no glandular differentiation

D Cribriform glands with central necrosis

Answer: C. Carcinoma with no glandular differentiation | Gleason Grade 5 is the most poorly differentiated pattern: sheets, cords, or single cells with complete loss of glandular architecture.

Type II Membranoproliferative Glomerulonephritis (Dense Deposit Disease) is characterized by deposition of which complement component?

A IgA

B IgG

C C3

D C4

Answer: C. C3 | Type II MPGN is characterized by C3 deposition in the GBM due to alternative complement pathway activation, often via C3 nephritic factor.

Prostate carcinoma most commonly arises from which zone of the prostate?

A Central zone

B Transitional zone

C Peripheral zone

D Periurethral zone

Answer: C. Peripheral zone | Approximately 70-80% of prostate carcinomas originate in the peripheral zone, often palpable on digital rectal exam.

Which of the following is correct regarding autosomal recessive polycystic kidney disease (ARPKD)?

A It is caused by mutation in the PKD1 gene on chromosome 16

B It is caused by mutation in the PKD2 gene

C It is caused by mutation in the PKHD1 gene

D It typically presents in middle-aged adults

Answer: C. It is caused by mutation in the PKHD1 gene | ARPKD is caused by mutations in PKHD1 (fibrocystin/polyductin); PKD 1 and PKD2 mutations cause the autosomal dominant form (ADPKD).

Which of the following is correct regarding primary membranous glomerulonephritis?

A It is caused by IgA deposits in the mesangium

B It is the most common cause of nephrotic syndrome in children

C It shows thickening of the glomerular basement membrane (GBM)

D It is associated with subendothelial immune deposits

Answer: C. It shows thickening of the glomerular basement membrane (GBM) | Primary membranous GN is characterized by subepithelial immune complex deposits (anti-PLA2R) causing GBM thickening with a 'spike and dome' pattern.

Struvite kidney stones are composed of which substance?

A Calcium oxalate

B Uric acid

C Magnesium ammonium phosphate

D Cystine

Answer: C. Magnesium ammonium phosphate | Struvite stones form in urease-producing bacterial infections (e.g., Proteus, Klebsiella), which generate ammonia and raise urinary pH.

Which of the following is NOT a recognized cause of hydronephrosis?

A Posterior urethral valves

B Ureteral calculus

C Simple renal cyst

D Retroperitoneal fibrosis

Answer: C. Simple renal cyst | A simple renal cyst does not obstruct urine flow and therefore does not cause hydronephrosis; all other options cause urinary tract obstruction.

Which of the following statements is INCORRECT regarding papillary renal cell carcinoma?

A It is associated with mutation of the MET proto-oncogene on chromosome 7q

B It characteristically shows lipid-rich and vacuolated cytoplasm

C It tends to be bilateral and multifocal

D It arises from proximal tubular epithelium

Answer: B. It characteristically shows lipid-rich and vacuolated cytoplasm | Lipid-rich, vacuolated cytoplasm is a hallmark of clear cell RCC, not papillary RCC, which shows papillary architecture with foamy macrophages.

Which of the following clinical features is more commonly associated with upper urinary tract infection (pyelonephritis) than lower UTI (cystitis)?

A Dysuria

B Urinary frequency

C Fever and systemic symptoms and flank pain

D Suprapubic tenderness

Answer: C. Fever and systemic symptoms and flank pain | Upper UTI involves renal parenchymal inflammation causing systemic features such as fever, rigors, and flank pain; lower UTI symptoms are local.

Which of the following is correct regarding asymptomatic bacteriuria (ASB)?

A Catheterized patients with ASB should always be treated with antibiotics

B ASB in early pregnancy does not require treatment

C The most commonly isolated organism is Escherichia coli

D ASB becomes symptomatic within one week if untreated

Answer: C. The most commonly isolated organism is Escherichia coli | E. coli accounts for ~80% of ASB cases; unlike symptomatic UTI, ASB generally does not require treatment except in pregnancy and pre-urological procedures.

Which of the following sexually transmitted infections is most frequently asymptomatic in women?

A Trichomoniasis

B Vulvovaginal candidiasis

C Primary syphilis

D Chlamydia trachomatis infection

Answer: D. Chlamydia trachomatis infection | Up to 70-80% of women infected with Chlamydia trachomatis are asymptomatic, making it a leading cause of undetected PID and tubal infertility.

A woman presents with thin, grey-white vaginal discharge with a fishy odor. Vaginal pH is above 4.5. No sexual contact in the past six months. What is the most likely diagnosis?

A Vulvovaginal candidiasis

B Trichomoniasis

C Bacterial vaginosis

D Chlamydial cervicitis

Answer: C. Bacterial vaginosis | Bacterial vaginosis is diagnosed by Amsel's criteria (thin discharge, pH >4.5, positive whiff test, clue cells), resulting from anaerobic overgrowth.

Which of the following urine sample findings is the best indicator of poor sample quality or contamination?

A Positive nitrite test

B Squamous epithelial cell count above 20 per low-power field

C Positive leukocyte esterase

D Presence of red blood cells

Answer: B. Squamous epithelial cell count above 20 per low-power field | >20 squamous epithelial cells per LPF indicates urogenital/perineal contamination, rendering culture results unreliable and requiring a repeat specimen.

A male patient presents with a painful vesicular genital rash that has begun to ulcerate. He reports multiple unprotected sexual partners. What is the most likely causative organism?

A Neisseria gonorrhoeae

B Treponema pallidum

C Herpes simplex virus (HSV)

D Haemophilus ducreyi

Answer: C. Herpes simplex virus (HSV) | Genital herpes presents with clusters of painful vesicles that rupture into shallow ulcers; unlike syphilitic chancres (painless), HSV ulcers are painful and recurrent.

Which of the following is true regarding genital warts (condylomata acuminata)?

A They are caused by HSV-2 and are not vaccine-preventable

B They are caused by HPV types 16 and 18, which carry high malignant potential

C They can be prevented by HPV vaccination, which also reduces cervical carcinoma risk

D They are associated with painless ulceration and lymphadenopathy

Answer: C. They can be prevented by HPV vaccination, which also reduces cervical carcinoma risk | Genital warts are caused by low-risk HPV 6/11, while high-risk HPV 16/18 cause cervical carcinoma; the HPV vaccine protects against both.

Which of the following scenarios represents a case of complicated urinary tract infection?

A. A healthy young woman with dysuria and frequency

B. A postmenopausal woman with recurrent UTI

C. A pregnant woman presenting with dysuria and bacteriuria

D. A young woman with a single episode of cystitis responding to antibiotics

Answer: C. A pregnant woman presenting with dysuria and bacteriuria | Complicated UTI occurs with structural, functional, or host factors raising treatment-failure risk; pregnancy is a classic complicating factor due to urinary stasis.

Regarding reabsorption of filtered HCO3-, one of the following is NOT true:

A Involves conversion of H+ and HCO3- to CO2 in the proximal tubular fluid

B Involves conversion of CO2 in proximal tubule cells to H+ and HCO3-

C Is almost 100% at normal filtered HCO3- loads

D Involves net secretion of H+ by proximal tubule cells

E The presence of carbonic anhydrase is important in this process

Answer: D. Involves net secretion of H+ by proximal tubule cells | Net H+ secretion by the proximal tubule is in fact how HCO3- reabsorption occurs - this statement is true, not false; all other options accurately describe the mechanism.

A patient has a twofold-elevated serum creatinine for 12 hours. To prevent worsening azotemia, GFR must be increased. Which manipulation is appropriate?

A Constricting renal afferent arteriole

B Dilating renal afferent arteriole

C Dilating renal efferent arteriole

D Increasing glomerular capillary colloid oncotic pressure

E Increasing hydrostatic pressure in Bowman's space

Answer: B. Dilating renal afferent arteriole | GFR increases by dilating the afferent arteriole, which raises glomerular hydrostatic pressure and blood flow; all other options reduce GFR.

A 45-year-old woman donates a healthy kidney to her sister. Regarding creatinine, which is expected to be decreased in the donor after full recovery?

A Clearance

B Plasma concentration

C Production

D Renal excretion

E Storage

Answer: A. Clearance | Total creatinine clearance is reduced after donation despite compensatory hypertrophy; plasma creatinine rises slightly then stabilizes, and production is unchanged.

Clearance of inulin = 120 mL/min, plasma X = 10 mg/dL, urine X = 10 mg/mL, urine flow = 1.5 mL/min. Calculate net secretion of substance X (freely filtered).

A 1 mg/min

B 2 mg/min

C 3 mg/min

D 4 mg/min

E 5 mg/min

Answer: C. 3 mg/min | Filtered load = 120 x 0.1 = 12 mg/min. Excreted = 10 x 1.5 = 15 mg/min. Net secretion = 15 - 12 = 3 mg/min.

Assuming constant GFR, plasma volume, and urine flow rate, the renal clearance of which substance will increase when its plasma concentration is significantly increased?

A Creatinine

B Inulin

C Mannitol

D Phosphate

E A glomerular marker

Answer: D. Phosphate | Phosphate reabsorption is saturable (Tmax); when plasma phosphate exceeds Tmax, reabsorption saturates and clearance increases.

All the following substances show transport maximum (Tmax) characteristics EXCEPT:

A Phosphate

B Glucose

C Amino acid

D PAH

E Inulin

Answer: E. Inulin | Inulin is freely filtered and neither secreted nor reabsorbed; it has no transporter and no Tmax, making it the gold standard for GFR measurement.

In a healthy person with a normal balanced diet, which substance has the greatest fraction excreted in urine compared to plasma?

A Creatinine

B Glucose

C Inulin

D Para-aminohippurate

E Urea

Answer: D. Para-aminohippurate | PAH is both freely filtered and actively secreted, giving ~90% extraction in a single pass; PAH clearance approximates renal plasma flow.

GFR = 100 mL/min, plasma X = 2 mg/mL, urine X = 50 mg/mL, urine flow = 1 mL/min. Drug X is unbound. What can be concluded about renal tubular handling?

A It is neither secreted nor reabsorbed by tubules

B The tubules reabsorbed 50 mg/min of it

C The tubules reabsorbed 150 mg/min of it

D The tubules secreted 50 mg/min of it

E The tubules secreted 150 mg/min of it

Answer: C. The tubules reabsorbed 150 mg/min of it | Filtered load = 100 x 2 = 200 mg/min. Excreted = 50 x 1 = 50 mg/min. Reabsorption = 200 - 50 = 150 mg/min.

Which of the following conditions is most likely to present with an impaired ability to maximally concentrate urine?

A Patient being on a low-protein diet

B Patient feeling cold due to overt hypothyroidism

C Patient receiving carbonic anhydrase inhibitors

D Patient presenting with gastrointestinal bleeding

E Patient receiving high-dose corticosteroid therapy

Answer: A. Patient being on a low-protein diet | Urine concentrating ability depends on the medullary osmotic gradient maintained by urea recycling; a low-protein diet reduces urea and impairs this gradient.

A new drug increases the rate of reabsorption of filtered bicarbonate by the proximal renal tubule. What is the most likely mechanism?

A Decreasing arterial blood PCO2

B Decreasing glomerular filtration rate

C Increasing pH inside the tubule cells

D Inhibiting carbonic anhydrase activity

E Stimulating the luminal Na+/H+ exchanger

Answer: E. Stimulating the luminal Na+/H+ exchanger | HCO3- reabsorption depends on H+ secretion via the apical Na+/H+ exchanger (NHE3); stimulating it increases bicarbonate reabsorption.

A drug inhibits the conversion of glutamine to bicarbonate and ammonium in proximal tubular cells. What change is expected in a patient with healthy kidneys?

A A decrease of K+ in plasma

B A decrease in plasma pH

C An increase in plasma NH4+

D An increase in urinary pH

E Excess H+ excretion by titratable acid as a compensatory response

Answer: B. A decrease in plasma pH | Glutamine metabolism generates new HCO3- and buffers H+ via NH3; inhibiting it reduces bicarbonate generation, causing H+ accumulation and falling plasma pH.

Which histological feature is expected to be seen in invasive breast carcinoma grade 1?

A Necrosis and pleomorphism

B Excessive tubular formation, mononuclear cells, and no mitotic figures

C High mitotic rate with poor tubule formation

D Marked nuclear atypia with necrosis

Answer: B. Excessive tubular formation, mononuclear cells, and no mitotic figures | Grade 1 invasive breast carcinoma shows >75% tubule formation, mild nuclear atypia, and low mitotic count; necrosis/high mitoses indicate higher grade.

Paget's disease of the nipple is most commonly associated with which of the following?

A Fibrocystic change

B Underlying invasive breast carcinoma

C Benign intraductal papilloma

D Phyllodes tumor

Answer: B. Underlying invasive breast carcinoma | Paget's disease of the nipple represents intraepidermal spread of malignant cells from an underlying ductal carcinoma (in situ or invasive).

Which of the following statements is INCORRECT regarding endometriosis?

A. It is synonymous with adenomyosis

B. The most common site of involvement is the ovary

C. It is defined as endometrial glands and stroma outside the uterine cavity

D. It can cause dysmenorrhea and infertility

Answer: A. It is synonymous with adenomyosis | Endometriosis and adenomyosis are distinct: endometriosis is ectopic endometrial tissue outside the uterus, adenomyosis is endometrial tissue within the myometrium.

Which of the following statements about breast anatomy and lymphatic drainage is INCORRECT?

A The 10 o'clock position of the right breast is drained by anterior axillary lymph nodes

B The 10 o'clock position of the left breast is supplied by the lateral thoracic artery

C The medial quadrants of the breast drain to the internal mammary lymph nodes

D The tail of Spence passes through foramen of langer

Answer: B. The 10 o'clock position of the left breast is supplied by the lateral thoracic artery | The 10 o'clock position on the left breast (upper medial quadrant) is supplied by internal thoracic artery perforators, not the lateral thoracic artery.

Which of the following represents an INCORRECT match regarding urogenital embryology?

A Prostatic urethra - endodermal origin

B Spongy urethra - ectodermal origin

C Membranous urethra - mesodermal origin

D Bladder trigone - mesodermal origin

Answer: C. Membranous urethra - mesodermal origin | The membranous urethra is derived from endoderm of the urogenital sinus, not mesoderm; only the distal spongy urethra has ectodermal contributions.

Failure of formation of which structure is responsible for the development of a vaginorectal fistula?

A Urorectal septum

B Urogenital membrane

C Cloacal membrane

D Perineal body

Answer: A. Urorectal septum | The urorectal septum divides the cloaca into the urogenital sinus and anorectal canal; failure of its formation causes vaginorectal fistula.

A mean oxygen content difference of 20 mL/dL exists between maternal and fetal blood. Which best explains the efficiency of fetal oxygen uptake?

A Fetal hemoglobin has an oxygen-dissociation curve shifted to the right

B Fetal hemoglobin is present at 50% lower concentration than maternal hemoglobin

C The Bohr effect: fetal blood is relatively alkaline and binds more oxygen, while maternal blood becomes acidic and releases oxygen

D The placental exchange surface area is larger than that of the lungs

Answer: C. The Bohr effect: fetal blood is relatively alkaline and binds more oxygen, while maternal blood becomes acidic and releases oxygen | As CO2 transfers from fetal to maternal blood, maternal blood becomes acidic (releasing O2) while fetal blood becomes alkaline (binding O2) - the double Bohr effect.

In an animal experiment, GnRH was administered continuously with a constant plasma concentration maintained. What is the expected effect on gonadotropins?

A LH and FSH will increase progressively

B Only LH will be suppressed

C LH and FSH will be suppressed, resulting in an anovulatory cycle

D FSH will increase while LH remains unchanged

Answer: C. LH and FSH will be suppressed, resulting in an anovulatory cycle | Continuous (non-pulsatile) GnRH desensitizes pituitary GnRH receptors, suppressing LH and FSH and causing anovulation.

A 45-year-old woman presents with 3 months of amenorrhea. Labs show elevated prolactin, estriol, estrone, and progesterone, with very low FSH and LH. What is the most likely diagnosis?

A Hypothalamic insufficiency

B Menopause

C Pregnancy

D Prolactinoma

Answer: C. Pregnancy | In pregnancy, elevated hCG maintains the corpus luteum (raising progesterone/estrogens) while high estrogen/progesterone suppress GnRH, yielding very low FSH/LH.

What is the mechanism by which the zona pellucida becomes 'hardened' after sperm penetration to prevent polyspermy?

A A reduction in estradiol

B The proteins released from the acrosome of the sperm

C An increase in intracellular calcium in the oocyte

D An increase in testosterone that affects the sperm

Answer: C. An increase in intracellular calcium in the oocyte | Sperm entry triggers a calcium wave causing cortical granule release, which modifies ZP2/ZP3 proteins, hardening the zona pellucida.

Which structure is found directly lateral to the vagina?

A Levator ani muscle

B Ureter

C Sphincter urethrae and deep transverse perineal muscle

D Obturator internus muscle

Answer: C. Sphincter urethrae and deep transverse perineal muscle | The deep perineal pouch, containing the external urethral sphincter and deep transverse perineal muscle, lies directly lateral to the vagina.

Which organ does the placenta depend on for the supply of DHEAS used in estrogen synthesis?

A Maternal adrenal gland

B Fetal liver

C Fetal adrenal gland

D Maternal ovary

Answer: C. Fetal adrenal gland | The placenta lacks enzymes for complete estrogen synthesis and depends on DHEAS from the fetal adrenal gland as a precursor, forming the fetoplacental unit.

Which agent is most commonly used for cervical ripening and labor induction?

A Oxytocin

B Prostaglandins

C Misoprostol

D Mifepristone

Answer: B. Prostaglandins | Prostaglandins (PGE2/dinoprostone, PGE1/misoprostol) promote uterine contractions and cervical softening for labor induction.

Which of the following statements about estrogen is INCORRECT?

A Estrogen promotes closure of the epiphyseal growth plates

B Estrogen increases HDL and decreases LDL cholesterol

C Epiphyseal closure occurs earlier under testosterone than estrogen

D Estrogen stimulates development of secondary female sexual characteristics

Answer: C. Epiphyseal closure occurs earlier under testosterone than estrogen | Estrogen (from aromatization of androgens) is the primary hormone driving epiphyseal closure in both sexes; testosterone acts mainly via conversion to estradiol.

When performing in vitro sperm maturation, from which structure should the fluid be obtained?

A Uterus

B Epididymis

C Vas deferens

D Prostate

Answer: B. Epididymis | Sperm acquire motility and fertilizing ability during epididymal transit; epididymal fluid is used in assisted reproduction (MESA/PESA).

PTEN tumor suppressor gene mutations are most commonly associated with which type of carcinoma?

A Serous carcinoma

B Mucinous carcinoma

C Endometrioid carcinoma

D Clear cell carcinoma

Answer: C. Endometrioid carcinoma | PTEN loss activates the PI3K/AKT pathway and is found in 40-80% of endometrioid endometrial and ovarian carcinomas, often with endometriosis.

A man is taking a testosterone analogue. Which of the following is expected to increase?

A Inhibin from Sertoli cells

B Hematocrit

C Serum LH level

D Sperm count

Answer: B. Hematocrit | Exogenous testosterone stimulates erythropoietin and erythropoiesis, increasing hematocrit, while negative feedback suppresses LH, FSH, and inhibin.

Administration of a drug that lowers LH will result in decreased production of which substance from Leydig cells?

A Testosterone

B Inhibin

C Estradiol

D Androstenedione

Answer: A. Testosterone | Leydig cells are stimulated by LH to produce testosterone via cAMP-PKA signaling; lowering LH decreases testosterone synthesis.

After vaginal delivery, a woman undergoes episiotomy repair. Which muscle, cut during episiotomy, attaches to and fixes the perineal body?

A Bulbospongiosus

B External anal sphincter

C Superficial transverse perineal muscle

D Deep transverse perineal muscle

Answer: C. Superficial transverse perineal muscle | The superficial transverse perineal muscle runs from the ischial tuberosity to the perineal body, stabilizing it; it is involved in episiotomy.

Which of the following correctly matches a diuretic with an appropriate clinical use?

A Acetazolamide - hypercalcemia

B Mannitol - cerebral edema

C Furosemide - pulmonary edema

D Spironolactone - nephrogenic diabetes insipidus

Answer: C. Furosemide - pulmonary edema | Furosemide is first-line in acute pulmonary edema due to rapid venodilation and potent diuresis reducing preload and pulmonary congestion.

Which of the following is an INCORRECT pairing of a diuretic with its associated acid-base disturbance?

A Spironolactone - hyperkalemic metabolic acidosis

B Methazolamide - hyperchloremic metabolic acidosis

C Conivaptan - hyponatremic metabolic acidosis

D Furosemide - hypokalemic metabolic alkalosis

E Thiazide - hypokalemic metabolic alkalosis

Answer: C. Conivaptan - hyponatremic metabolic acidosis | Conivaptan, a vasopressin receptor antagonist, causes aquaresis and increases serum sodium - it does not cause hyponatremia or metabolic acidosis.

A female completes antibiotics for sinusitis and develops white vaginal discharge with intense pruritus. What is the most appropriate antifungal agent?

A Intravenous amphotericin B

B Intravenous echinocandin

C Topical miconazole

D Topical terbinafine

Answer: C. Topical miconazole | Post-antibiotic vulvovaginal candidiasis is treated with topical azoles (e.g., miconazole) as first-line therapy.

What is the most common shared adverse effect among antineoplastic (chemotherapy) drugs?

A Hepatotoxicity

B Nephrotoxicity

C Bone marrow depression (myelosuppression)

D Peripheral neuropathy

Answer: C. Bone marrow depression (myelosuppression) | Chemotherapy targets rapidly dividing cells; bone marrow stem cells are among the fastest-dividing, making myelosuppression the most common shared adverse effect.

Which of the following represents an INCORRECT match between an antimicrobial agent and its clinical use?

A Metronidazole - Bacteroides fragilis infection

B Clindamycin - Trichomonas vaginalis infection

C Clindamycin - bacterial vaginosis

D Metronidazole - bacterial vaginosis

Answer: B. Clindamycin - Trichomonas vaginalis infection | Trichomonas vaginalis is treated with metronidazole/tinidazole, not clindamycin; clindamycin is appropriate for bacterial vaginosis and B. fragilis.

Which of the following is NOT a recognized adverse effect of androgen therapy?

A Reproductive organ toxicity

B Cardiovascular effects (dyslipidemia, hypertension)

C Aggressiveness and behavioral changes

D Mood swings

E Impaired bone mineralization

Answer: E. Impaired bone mineralization | Androgens promote bone mineralization via osteoblast stimulation; impaired mineralization is NOT an androgen adverse effect.

Which of the following is NOT a recognized adverse effect of clomiphene citrate?

A Hot flushes

B Visual disturbances (intensification of afterimages)

C Uterine fibroids

D Multiple pregnancies

E Ovarian enlargement

Answer: C. Uterine fibroids | Clomiphene does not cause uterine fibroids; known effects include hot flushes, visual disturbances, ovarian enlargement, and multiple gestation.

Which of the following organisms is NOT within the antibacterial spectrum of fluoroquinolones?

A Escherichia coli

B Pseudomonas aeruginosa

C Streptococcus pneumoniae

D Methicillin-resistant Staphylococcus aureus (MRSA)

Answer: D. Methicillin-resistant Staphylococcus aureus (MRSA) | Fluoroquinolones have poor activity against MRSA due to acquired resistance mechanisms; MRSA requires vancomycin, linezolid, or daptomycin.

Which of the following drugs inhibits 5-alpha reductase and is used for benign prostatic hyperplasia (BPH)?

A Furosemide

B Dutasteride

C Tamsulosin

D Flutamide

Answer: B. Dutasteride | Dutasteride inhibits both type 1 and type 2 5-alpha reductase isoforms, blocking testosterone-to-DHT conversion and reducing prostate volume.

Which adverse effect of combined oral contraceptive pills necessitates immediate discontinuation?

A Thromboembolism

B Skin pigmentation (melasma)

C Elevated ESR

D Breakthrough bleeding

Answer: A. Thromboembolism | Thromboembolism (DVT, PE, stroke) is a life-threatening adverse effect of estrogen-containing OCPs requiring immediate cessation.

Tamoxifen is used primarily for which of the following indications?

A Palliative treatment of estrogen receptor-positive breast cancer

B Treatment of endometriosis

C Ovarian stimulation in IVF

D Prevention of osteoporosis in young women

Answer: A. Palliative treatment of estrogen receptor-positive breast cancer | Tamoxifen is a SERM acting as an ER antagonist in breast tissue, used for adjuvant and palliative treatment of ER-positive breast cancer.

Which of the following drug-adverse effect pairings is INCORRECT?

A Trimethoprim-sulfamethoxazole - hemolysis in G6PD-deficient patients

B Gatifloxacin - hypoglycemia

C Metronidazole - disulfiram-like reaction with alcohol

D Aminoglycosides - nephrotoxicity and ototoxicity

Answer: B. Gatifloxacin - hypoglycemia | Gatifloxacin causes dysglycemia (both hypo- and hyperglycemia) and was withdrawn in many markets; labeling it solely as hypoglycemia is incomplete/incorrect.

Which of the following correctly matches a diuretic with its mechanism of action?

A. Furosemide - inhibits Na+/K+/2Cl- cotransporter in the thick ascending limb

B. Micafungin - inhibits squalene epoxidase

C. Triamterene - inhibits Na+/Cl- cotransporter

D. Spironolactone - inhibits Na+/K+/2Cl- cotransporter in collecting duct

Answer: A. Furosemide - inhibits Na+/K+/2Cl- cotransporter in the thick ascending limb | Furosemide inhibits the NKCC2 cotransporter in the thick ascending limb; micafungin inhibits glucan synthase, and triamterene blocks ENaC.

Regarding loop diuretics vs thiazides, which of the following statements is TRUE?

A. Loop diuretics cause hypercalciuria, while thiazides cause hypocalciuria

B. Both cause hypokalemia and metabolic acidosis equally

C. Both cause hyperkalemia

D. Thiazides are more potent diuretics than loop diuretics

Answer: A. Loop diuretics cause hypercalciuria, while thiazides cause hypocalciuria | Loop diuretics inhibit TAL calcium reabsorption causing hypercalciuria; thiazides enhance distal calcium reabsorption, reducing urinary calcium.

Which drug inhibits beta(1,3)-glucan synthase and is used as an antifungal agent?

A Terbinafine

B Ketoconazole

C Micafungin

D Fluconazole

Answer: C. Micafungin | Micafungin is an echinocandin that inhibits beta(1,3)-glucan synthase, disrupting fungal cell wall synthesis.

An elderly man presents with hematuria occurring specifically at the last few drops of micturition (terminal hematuria). What is the most likely source of bleeding?

A Prostate

B Urethra

C Ureter

D Kidney

E Bladder

Answer: A. Prostate | Terminal hematuria localizes bleeding to the posterior urethra/bladder neck/prostate; in elderly men, prostatic causes (BPH, carcinoma) are most common.

A female patient develops urinary incontinence secondary to a cystocele. Which specialist is most appropriate for her management?

A Urogynecologist

B Adolescent gynecologist

C Gynecologic oncologist

D Perinatologist

E None of the above

Answer: A. Urogynecologist | Urogynecology specializes in pelvic floor disorders including cystocele and urinary incontinence - the appropriate subspecialty here.

During a hysterectomy, which structure is at greatest risk of inadvertent injury when clamping and ligating the uterine artery?

A Ureter

B Vaginal artery

C Obturator nerve

D Internal iliac artery

Answer: A. Ureter | The ureter passes close to the uterine artery at the level of the uterine isthmus ('water under the bridge'), making it vulnerable during hysterectomy.

A patient presents with scrotal swelling. Aspiration of the scrotal contents reveals urine. Which structure has most likely ruptured?

A Bladder neck

B Membranous urethra

C Penile urethra distal to the perineal membrane

D Posterior urethra

Answer: C. Penile urethra distal to the perineal membrane | Rupture of the penile (spongy) urethra below the perineal membrane allows urine to extravasate along Colles' fascia into the scrotum.

Which of the following best describes the histological characteristics of normal vaginal mucosa?

A Simple columnar epithelium with abundant mucous glands

B Thick stratified squamous non-keratinized epithelium with no glands, rich in glycogen, with transudate as secretion

C Pseudostratified ciliated columnar epithelium

D Transitional epithelium with umbrella cells

Answer: B. Thick stratified squamous non-keratinized epithelium with no glands, rich in glycogen, with transudate as secretion | The vagina is lined by non-keratinized stratified squamous epithelium rich in glycogen (used by lactobacilli); it has no glands and is lubricated by transudate.

Which structure, if present, can prevent the normal ascent of the kidney during embryogenesis?

A Inferior mesenteric artery

B Superior mesenteric artery

C Celiac trunk

D Gonadal artery

Answer: A. Inferior mesenteric artery | Aberrant lower pole vessels from the inferior mesenteric artery can tether the kidney during ascent, resulting in a pelvic or horseshoe kidney.

The lymphatic drainage of the uterine fundus drains primarily to which lymph node group?

A Superficial inguinal lymph nodes

B External iliac lymph nodes

C Internal iliac lymph nodes

D Lateral aortic (para-aortic) lymph nodes

Answer: D. Lateral aortic (para-aortic) lymph nodes | The uterine fundus drains via the ovarian vessels to the para-aortic lymph nodes at L1-L2, important in staging endometrial/ovarian cancers.

Which of the following correctly describes the relationship of the round ligament to the ovary?

A The round ligament passes superior to the ovary

B The round ligament passes inferior to the ovary

C The round ligament is the same structure as the ovarian ligament

D The round ligament suspends the ovary from the pelvic sidewall

Answer: B. The round ligament passes inferior to the ovary | The round ligament arises from the uterine cornua just inferio r to the utero-ovarian ligament and passes through the inguinal canal to the labium majus.

What is the karyotype of an incomplete (partial) hydatidiform mole?

A 46,XX (diploid, all paternal)

B 45,X0

C 69,XXY (triploid)

D 47,XYY

Answer: C. 69,XXY (triploid) | Incomplete moles are triploid (69,XXX or 69,XXY) from fertilization of a normal ovum by two sperm; complete moles are diploid (46,XX), all paternal.

Cervical intraepithelial neoplasia grade 1 (CIN 1) is characterized by dysplasia involving which portion of the epithelial thickness?

A Full thickness of the epithelium

B Upper two-thirds of the epithelium

C Lower one-third of the epithelium

D Middle half of the epithelium

Answer: C. Lower one-third of the epithelium | CIN 1 (mild dysplasia) is confined to the lower one-third (basal layer) of the cervical epithelium and has a high rate of spontaneous regression.

Which of the following ovarian tumors is NOT of epithelial origin?

A Serous cystadenoma

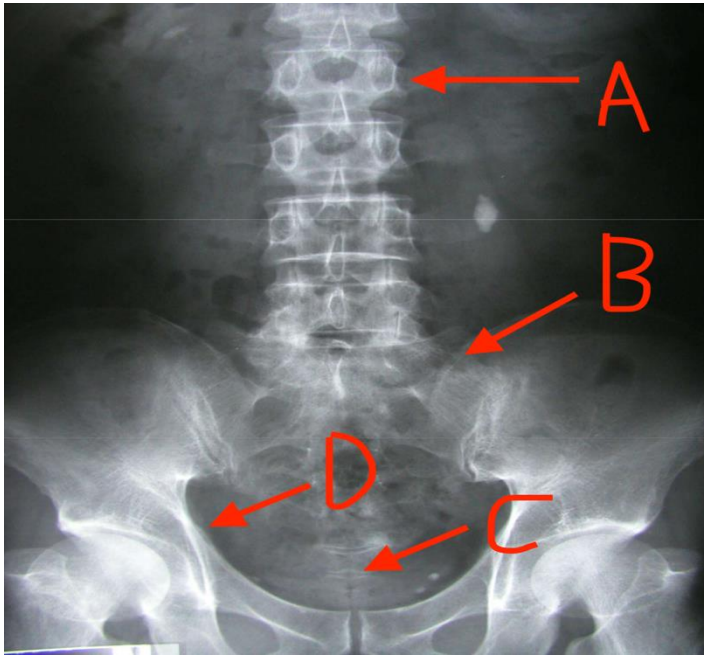
B Mucinous cystadenoma

C Mature cystic teratoma (dermoid cyst)

D Endometrioid carcinoma

Answer: C. Mature cystic teratoma (dermoid cyst) | Mature cystic teratomas are germ cell tumors containing tissue from all three germ layers; the others are surface epithelial-stromal tumors.

Lab & Image-Based Questions



On this abdominal X-ray showing the lumbar spine and pelvis (markers A-D), which labeled point represents the most common site of ureteric constriction?

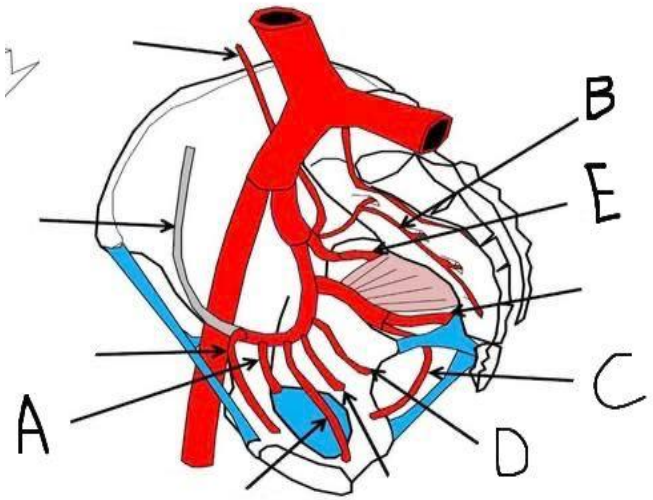
A A - pelviureteric junction

B B - pelvic brim (crossing the iliac vessels)

C C - vesicoureteric junction

D D - ischial spine level

Answer: A. A - pelviureteric junction | The pelviureteric junction (PUJ, marked A) is the most common site of ureteric narrowing and stone impaction, along with the pelvic brim and vesicoureteric junction.



On this pelvic vasculature diagram (labeled A-E), which labeled artery supplies the prostate gland?

A A

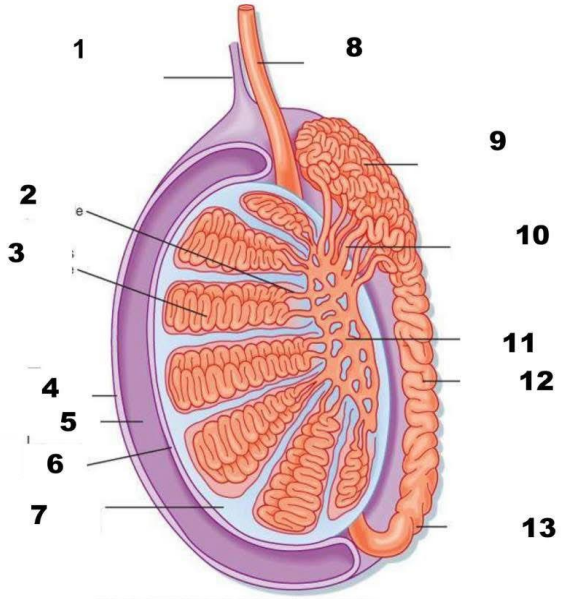
B B

C C

D D

E E

Answer: D. D | The prostate is supplied primarily by the inferior vesical artery, a branch of the internal iliac artery, corresponding to D in this diagram.



On this testis cross-sectional diagram (numbered 1-13), structure number 10 has which embryological origin?

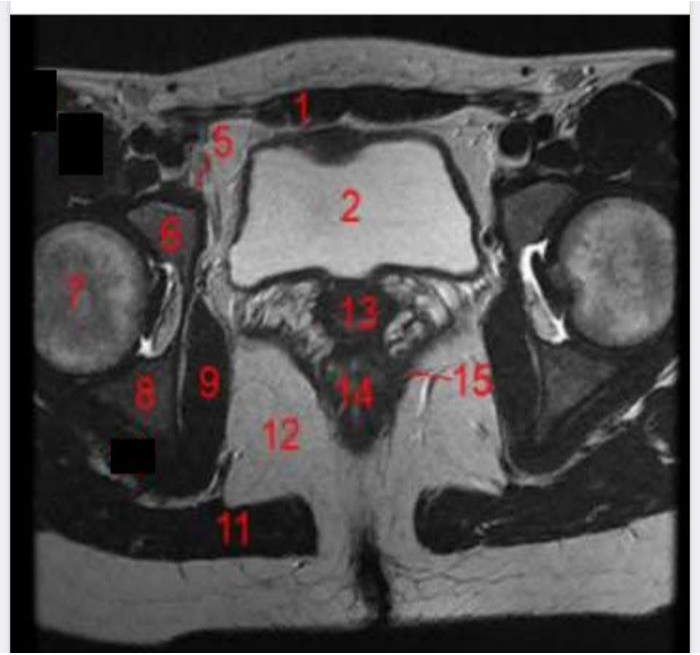
A Mesonephric tubules

B Paramesonephric duct

C Metanephric blastema

D Urogenital sinus

Answer: A. Mesonephric tubules | Structure 10 represents the efferent ductules, which develop from mesonephric (Wolffian) tubules connecting the rete testis to the epididymis.



On this axial MRI of the pelvis (numbered 1-15), which structure occupies the space labeled 12?

A Bulbospongiosus muscle

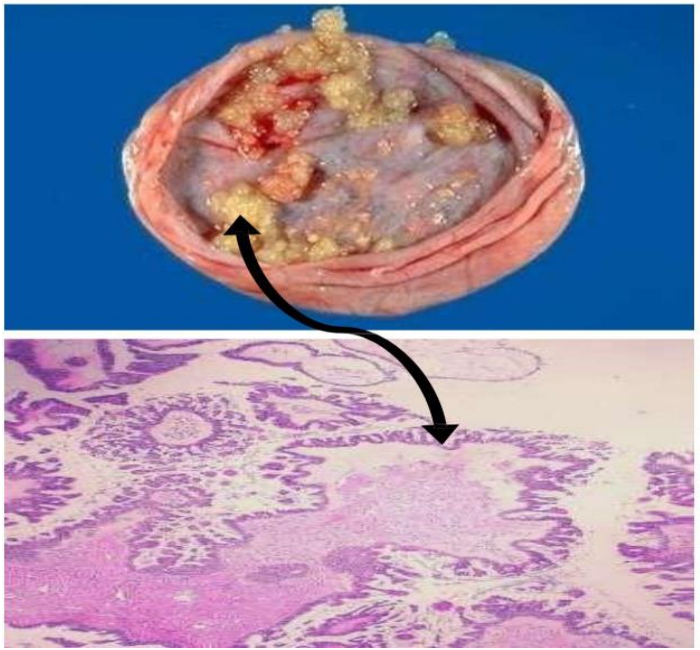
B Ischiocavernosus muscle

C Pudendal nerve

D Dorsal artery of the penis

E Dorsal artery of the clitoris

Answer: C. Pudendal nerve | The pudendal nerve runs within Alcock's canal along the lateral wall of the ischioanal fossa, corresponding to region 12 on this axial MRI slice.



This gross specimen and corresponding histology image represent which diagnosis?

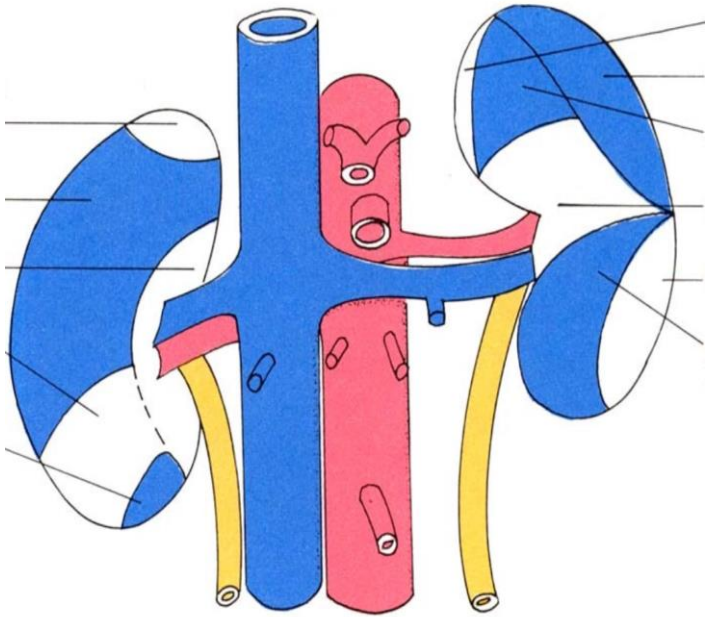
A Mucinous cystadenoma

B Serous cystadenocarcinoma

C Borderline serous ovarian tumor

D Mature cystic teratoma (dermoid cyst)

Answer: C. Borderline serous ovarian tumor | Borderline serous tumors show papillary architecture with epithelial proliferation and nuclear atypia but lack destructive stromal invasion, distinguishing them from invasive carcinoma.



On this renal vasculature diagram, which of the following is a true anatomical relation of the left kidney?

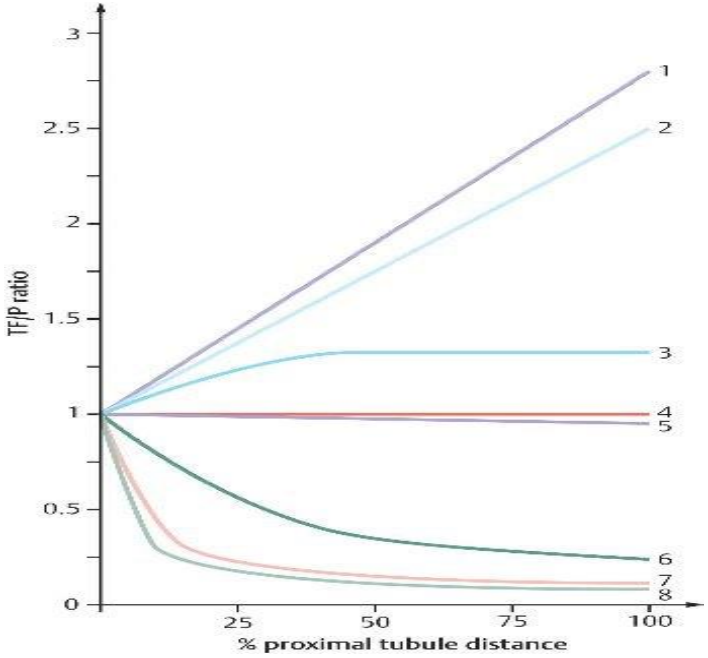
A Descending colon

B Right lobe of liver

C Duodenum

D Inferior vena cava directly posterior

Answer: A. Descending colon | The left kidney relates anteriorly/laterally to the descending colon, spleen, pancreas tail, and stomach; the liver, duodenum, and IVC are right kidney relations.



The image shows TF/P (tubular fluid/plasma) ratios for several freely filtered substances (lines 1-8) along the proximal tubule. Which best describes the proximal tubule reabsorption of the substance represented by line 3?

A Not reabsorbed at all in the proximal tubule

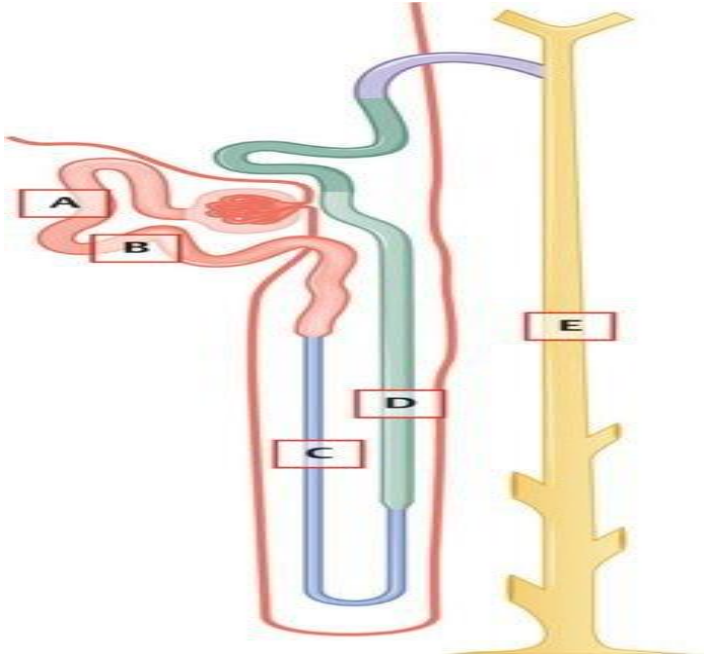
B Reabsorbed at a rate that is equal to water reabsorption

C Reabsorbed at a rate that is faster than water reabsorption

D Reabsorbed at a rate that is slower than water reabsorption

E Reabsorbed completely in the proximal tubule

Answer: D. Reabsorbed at a rate that is slower than water reabsorption | A TF/P ratio rising above 1 (line 3) indicates the substance is reabsorbed more slowly than water, so water reabsorption concentrates it in the tubular fluid relative to plasma.



A 63-year-old man develops a strong urge to urinate and produces a large volume of light-colored urine when outdoors on very cold days ('cold diuresis'). This response is most likely mediated by a decrease in a hormone that normally acts at which labeled site of the nephron (A-E)?

A A

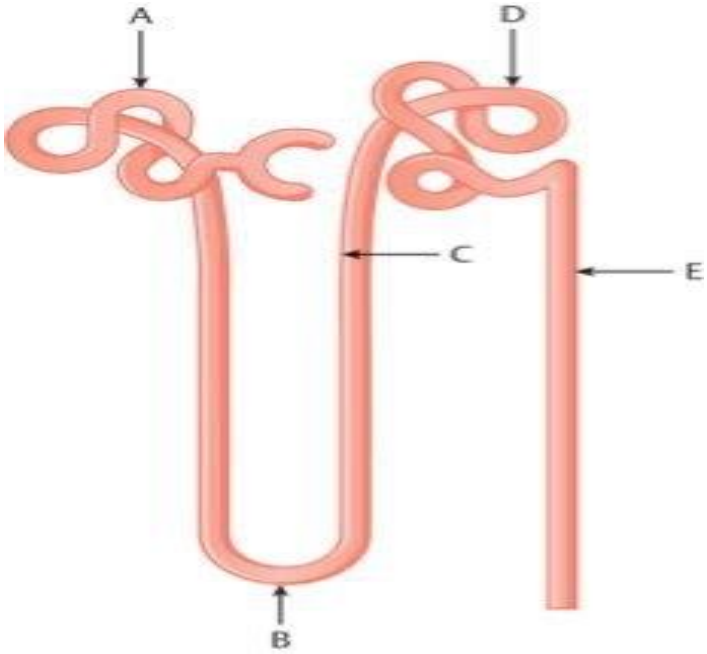
B B

C C

D D

E E

Answer: E. E | Cold-induced diuresis suppresses ADH release; ADH normally acts on the collecting duct (E) to increase water permeability via aquaporin-2, so its decrease produces dilute, high-volume urine.



In which labeled portion of the nephron (A-E) will the tubular fluid osmolality remain constant (isosmotic to plasma) regardless of the presence or absence of antidiuretic hormone (ADH)?

A A

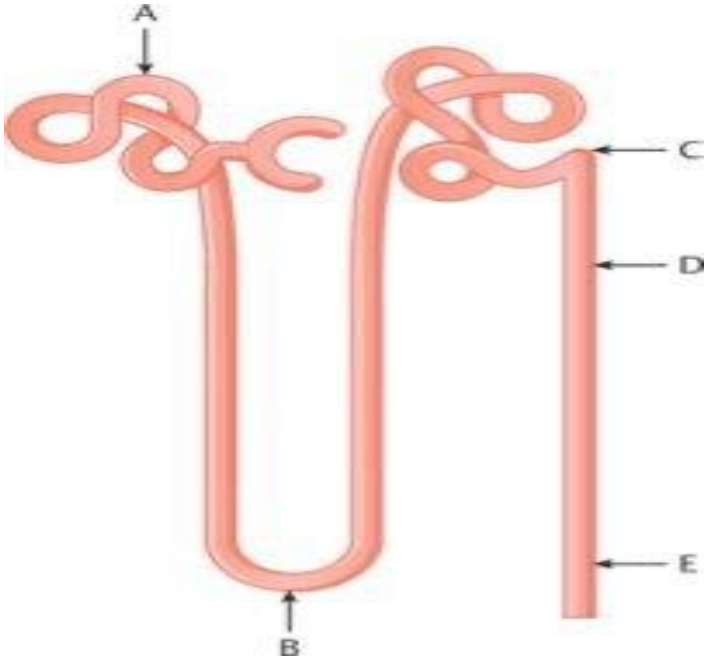
B B

C C

D D

E E

Answer: A. A | The proximal tubule (A) reabsorbs water and solutes isosmotically, keeping tubular fluid osmolality equal to plasma (~300 mOsm/kg) regardless of ADH status.



In a micropuncture study, a tubular fluid sample showed osmolality of 1,100 mOsm/kg and pH of 4.8. Extrapolated to a human nephron, from which labeled segment (A-E) was this fluid most likely sampled?

A A

B B

C C

D D

E E

Answer: E. E | A high osmolality (hyperosmotic to plasma) with acidic pH is characteristic of the collecting duct (E) under maximal ADH stimulation, where water reabsorption concentrates urine and H+ secretion acidifies it.

Good Luck!

DON’T FORGET ME FROM YOUR DUAA :)