

Abdomen

Abdominal Wall

01. Inguinal canal (Residency March 2026)

- a) Acts as conduit for ilioinguinal nerve
- b) Has an opening in external oblique aponeurosis
- c) Is supported posteriorly mostly by transversalis fascia
- d) Lies just above inguinal ligament
- e) Transmits round ligament in female

Answer: T T (superficial ring) **T T T**

Explanation:

Features of the inguinal canal

Features	Formed by
Boundaries	
Anterior wall	External oblique aponeurosis (supplemented by internal oblique in the lateral 1/3rd)
Posterior wall	Fascia transversalis (supplemented by conjoint tendon in the medial 2/3rd)
Roof	Internal oblique and transversus abdominis muscles (arched fibres)
Floor	Inguinal ligament (supplemented by lacunar ligament medially)
Openings	
Superficial inguinal ring	Triangular aperture in external oblique aponeurosis above and lateral to the pubic crest
Deep inguinal ring	Oval aperture in fascia transversalis 1.25 cm above the midinguinal point

(Ref: Vishram /Vol 2/ P-54)

02. During midline abdominal incision following structures are incised (Residency March 2023)

- a) Fascia scarpa
- b) Anterior layer of rectus sheath

- c) Linea alba
- d) Parietal peritoneum
- e) Fascia transversalis

Answer: T F (Lies laterally) **T T T**

Explanation:

Anterior abdominal wall consists of eight layers:

- 1) Skin
- 2) Superficial fascia
- 3) External oblique muscle and its aponeurosis
- 4) Internal oblique muscle and its aponeurosis
- 5) Transversus abdominis muscle and its aponeurosis
- 6) Fascia transversalis
- 7) Extra peritoneal tissue
- 8) Parietal peritoneum

Opposite the linea alba the layers are reduced to six in number (Three aponeurosis jointly form linea alba)

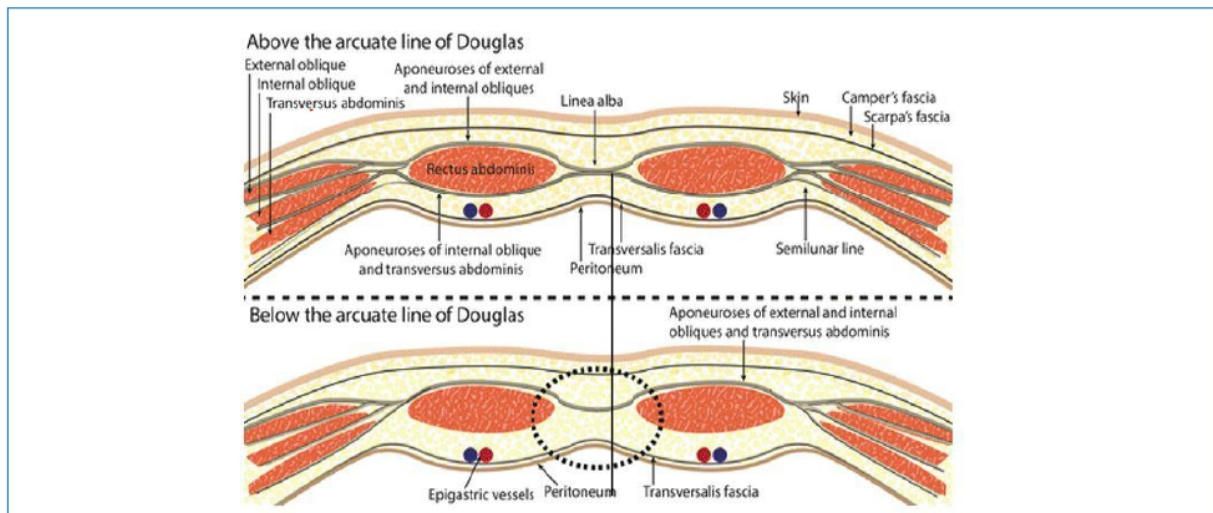
(Ref: Datta Anatomy/10th/P-119)

03. A midline abdominal incision below the umbilicus passes through the (Residency March 2018)

- a) Pyramidalis
- b) Linea alba
- c) Extraperitoneal fat
- d) Fascia transversalis
- e) Rectus abdominis

Answer: F (Lies laterally) **T T T F** (Lies laterally)

Explanation:



Abdominal Aorta & Its branches

28. Ventral branches of abdominal aorta (Residency March 2026)

- Celiac trunk
- Inferior mesenteric artery
- Middle suprarenal artery
- Renal artery
- Superior mesenteric artery

Answer: **T T F** (lateral branch) **F** (lateral branch) **T**

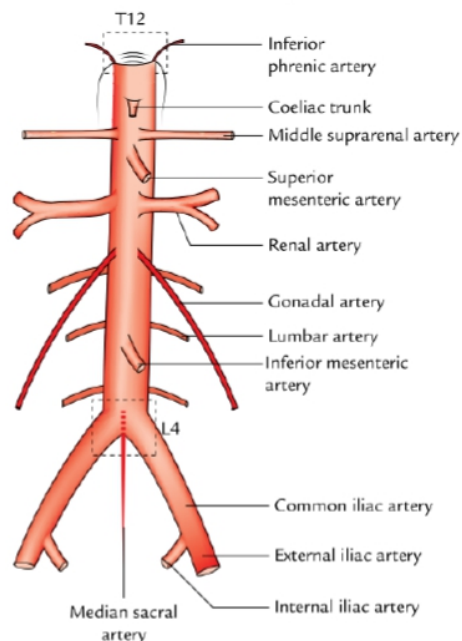


Fig. 12.6 Course and branches of the abdominal aorta.

(Ref: Vishrum S/2-189)

29. Inferior mesenteric artery supplies the (Residency March 2020)

- Anal canal below the pectinate line
- Appendix
- Coils of jejunum
- Descending colon
- Rectum

Answer: **F F F T T**

Explanation:

Supply of the inferior mesenteric artery:

- The left one third of the transverse colon,
- The entire descending and sigmoid colon,
- The rectum and the upper part of the anal canal up to the pectinate line as this part develop from hindgut.

(Ref: Datta 10th/V-1/P-136)

30. The inferior epigastric artery (Residency March 2013)

- Lies lateral to the deep inguinal ring
- Originates from the internal iliac artery
- Anastomoses with a branch of the internal thoracic artery
- Pierces the fascia transversalis
- Passes in front of the arcuate line

Answer: **F F T T T**

Explanation:

- lies medial to deep inguinal ring
- originates from external iliac artery
- Anastomosis with superior epigastric artery which is branch of internal thoracic artery
(Ref: Datta/ 10th /V-1 /P-133)

Peritoneum

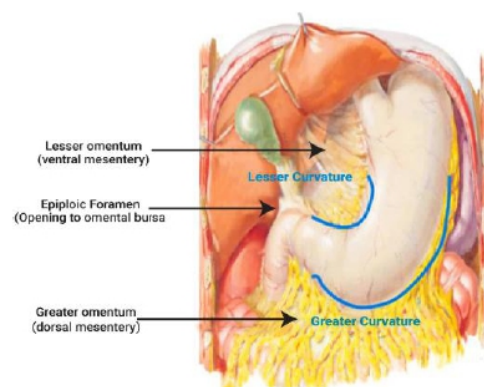
31. The lesser omentum (Residency March 2017)

- Lies between liver and stomach
- Has a right margin behind which lies an epiploic foramen
- Contains superior mesenteric artery
- Contains portal vein
- Attached superiorly with lesser curvature of stomach

Answer: **T T F T F**

Explanation:

- Lies between lesser omentum of stomach and proximal 2.5cm of duodenum to the liver
- The lesser omentum contains proper hepatic artery, portal vein, bile duct, lymph node lymphatic's, hepatic plexus of nerves, anastomosis of left and right gastric vessels
- The horizontal limb attached to the two lips of porta hepatis and vertical limb is attached to the bottom of the fissure ligamentum venosum.



(Ref: BD /7th/V-2 /P-285)

37. The following statements are correct regarding the adrenal glands (Residency March 2011)

- a) They lie anterior to the diaphragm.
- b) The right adrenal lies behind the pancreas.
- c) They drain into the superficial inguinal lymph nodes.
- d) The left adrenal lies behind the lesser sac.
- e) Their cortex is derived from the mesoderm.

Answer: T F F T T

Explanation:

- b) Left Adrenal gland
- c) Drain into lateral aortic lymph nodes
- e) From a supra renal ridge which is produced by proliferation of coelomic mesothelium
(Ref: Datta /10th/ Vol -1/ P- 167, 169)

Ureter & Urinary bladder

38. Ureteric constrictions (Residency March 2026)

- a) Commencement of renal pelvis (PUJ)
- b) Commencement of urinary bladder
- c) Exit point from bladder (VUJ)
- d) Pelvic brim
- e) Pelvi-ureteric junction

Answer: F F (incorrect site) T T T

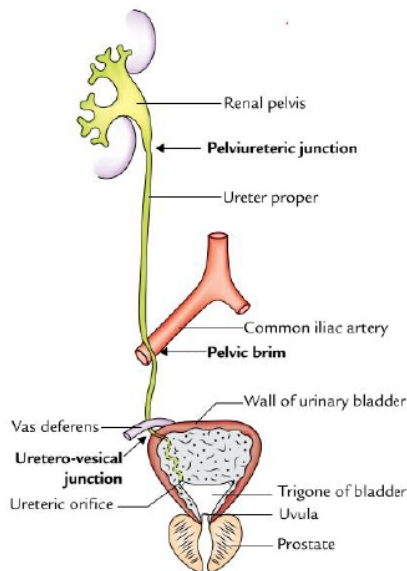


Fig. 11.25 Normal sites of anatomical constrictions in the ureter (arrows).

(Ref: Vishram S /2-179)

39. Ureter is supplied by (Residency March 2025)

- a) Femoral artery
- b) Gonadal artery
- c) Inferior phrenic artery
- d) Internal iliac artery
- e) Renal artery

Answer: F T F T T

Explanations:

The ureter derives its arterial supply from the branches of all the arteries related to it. The important arteries supplying ureter from above downward are-

1. Renal.
2. Testicular or ovarian.
3. Direct branches from aorta.
4. Internal iliac.
5. Vesical (superior and inferior).
6. Middle rectal.
7. Uterine

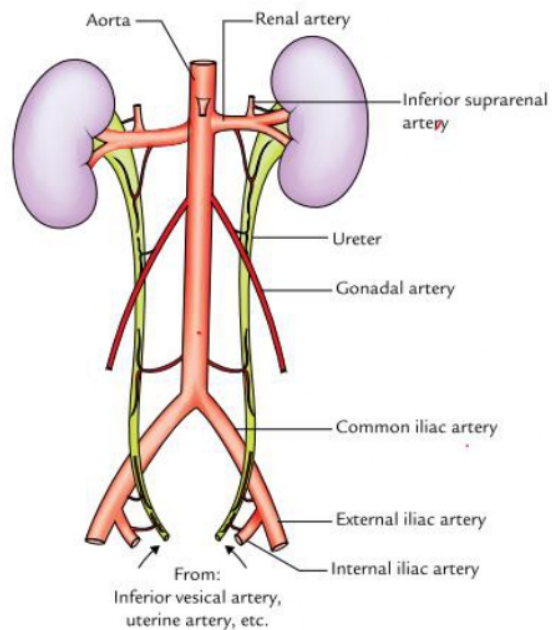


Fig. 11.26 Arterial supply of the ureter.

(Ref: Vishram Singh /Vol-2/2nd/P-178)

82. Structures which can be palpable during a digital rectal examination are (Diploma July 2019)

- a) Median lobe of the prostate
- b) Cervix
- c) Uterine body

- d) Seminal vesicles
- e) Coccyx

Answer: F T F T T

Explanation:

Structures palpated during DRE

Male	Female	In Both Sexes
<ul style="list-style-type: none"> • Posterior surface of prostate • Seminal vesicle • Vas (ductus) deferens • Distended bladder 	<ul style="list-style-type: none"> • Perineal body • Cervix • Uterocervical lig. • Presenting part of fetus 	<ul style="list-style-type: none"> • Anorectal ring • Coccyx & Sacrum • Ischiorectal fossa • Ischial spine

(Ref: BD/8th /V-2/P-480)

83. Following organs are palpable in per-rectal examination in the male (Diploma July 2008)

- a) Sacrum and coccyx
- b) Evidence of urinary retention in bladder
- c) Disease of seminal vesicle
- d) The median lobe of prostate gland
- e) The ductus deferens

Answer: T T T F (Primarily the posterior lobe, and partly the lateral lobe) **T**

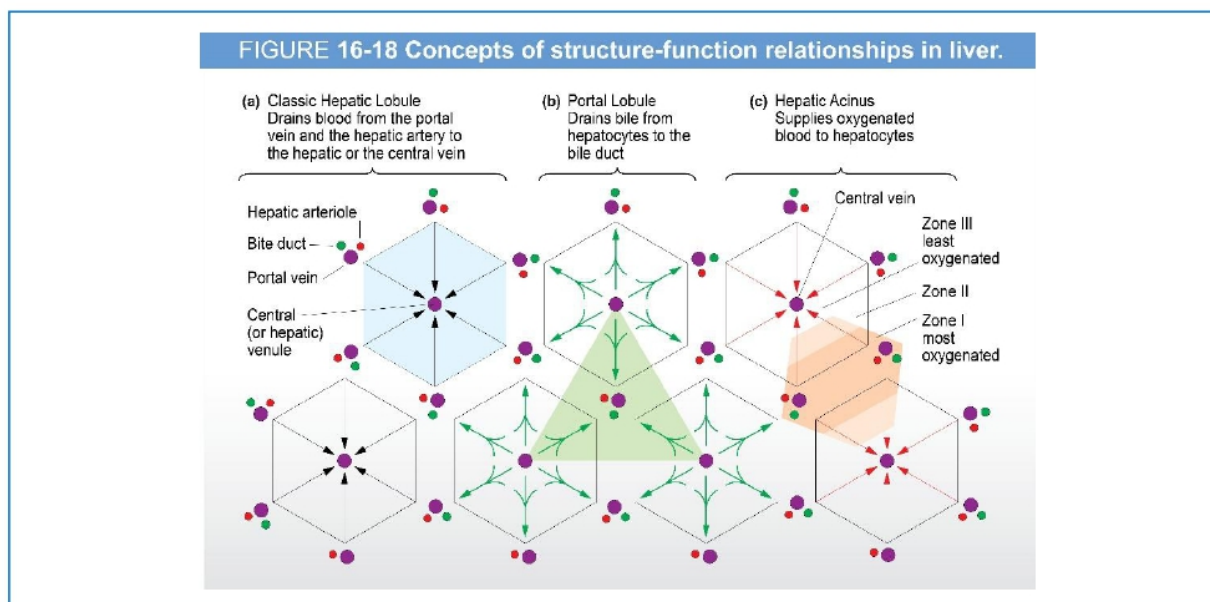
Liver

84. Zone three of hepatic acinus is first to show (Diploma July 2020)

- a) Ischemic necrosis
- b) Fat accumulation
- c) Bile stasis
- d) Regeneration
- e) Storage of glycogen

Answer: T F (hypophysis) **F F F**

Explanation:



The **hepatic acinus** concept emphasizes the different oxygen and nutrient contents of blood at different distances along the sinusoids, with blood from each portal area supplying cells in two or more classic lobules. Major activity of each hepatocyte is determined by its location along the oxygen/nutrient gradient;

periportal cells of zone I get the most oxygen and nutrients and show metabolic activity generally different from the pericentral hepatocytes of zone III, exposed to the lowest oxygen and nutrient concentrations.

(Ref: Junqueira/14th/P-345)

Bones of Head & Neck

50. Cranial dura mater (Residency March 2026)

- a) Has epidural space.
- b) Has four dural folds.
- c) Is avascular in nature.
- d) Important for preventing brain herniation
- e) Is richly innervated by nerve

Answer: F T F T T

Explanation:

- a) T (real space between bony wall & dura)
 - b) T - (falx cerebri, falx cerebelli, tentorium cerebelli, diaphragm sellae)
 - c) F - (highly vascular)
 - d) T (through dural fold & prevention of leakage of CSF)
 - e) T (by network of sensory & autonomic fiber)
- (Ref: Vishram (V-3/4th/P-312)

51. The second cervical vertebra or axis has (Residency March 2026)

- a) A large, kidney shaped body
- b) A large triangular vertebral foramen.
- c) A peg like odontoid process.
- d) Foramen transversarium.
- e) The longest spinous process

Answer: F (The superior surface of the body is fused with the dens or odontoid (body of Atlas))

T T T (c1-c7) **F** (the longest spinous process present in C7 called vertebra prominens.)

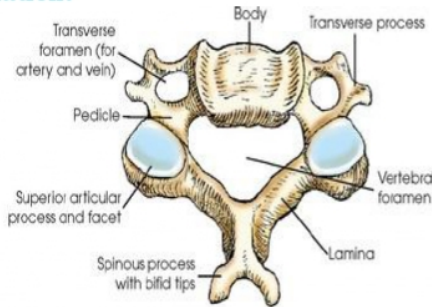
(Ref: Vishram Sing, P- 43,44/Vol: III)

52. Atypical cervical vertebra is characterized by (Residency March 2011)

- a) A foramen transversarium.
- b) A circular shaped vertebral canal. (Triangular shape)
- c) A bifid spinous process. (Short & bifid)
- d) A large transverse process. (Gall transverse process)
- e) A kidney-shaped body. (Body saddle shape)

Answer: T F (Triangular) **T F** (small transverse process contain transverse foramen C1-Cb) **F** (Saddle shape body)

Explanation:



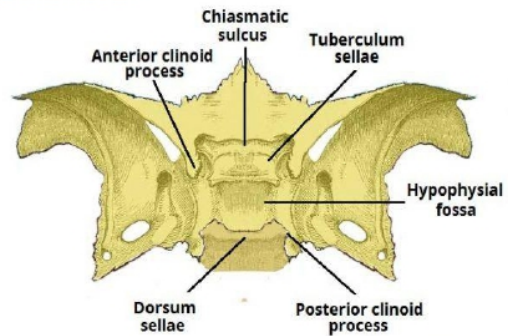
(Ref: BD/ 10th /Vol-3/P-51, 52/ Fig 1.49)

53. The body of the sphenoid (Residency March 2014)

- a) Articulate anteriorly with the frontal bone
- b) Forms the roof of the nasopharynx
- c) Projects postero-superiorly as the dorsum sellae
- d) Forms the superior relation of the cavernous sinus
- e) Ossifies in cartilage

Answer: F (superiorly) **T T F** (Inferior relation) **T**

Explanation:



(Ref: Lumley. Q-267)

Cervical Plexus

54. Nerves arises from the cervical plexus (C1 to C4) are (Residency March 2013)

- a) Phrenic
- b) Supraclavicular
- c) Lesser occipital
- d) Dorsal Scapular
- e) Suprascapular

Answer: T (C₃, C₄, C₅) **T** (C₃, C₄) **T** (C₂, C₃, C₄) **F** (C₅ Brachial plexus) **F** (C₅ C₆ Brachial plexus)

Explanation:

Branches of cervical plexus

Superficial branches

1. Lesser occipital
2. Greater auricular
3. Transverse cutaneous
4. Supraclavicular

Deep branches

- a) Communicating branches
- b) Muscle branches
 - i) To geniohyoid
 - ii) Thyrohyoid
 - iii) Ansa cervicalis
 - iv) Phrenic nerve

(Ref: BD /7th /V3 /P-175, Datta /5th/P-11, 98)

Alimentary System

65. Spaces of Disse (*Residency March 2026*)

- Are filled with blood plasma
- Are not continuous with spaces of Mall
- Are periportal & interlobular
- Contain Ito cells
- Lie between walls of sinusoids & hepatic laminae

Answer: T F (they are continuous) F T T
(*Ref: Junqueira's basic histology/ p-339*)

66. Parietal cells (*Residency March 2025*)

- Act as a chemoreceptor
- Are basophilic
- Have a deeply invaginated apical surface
- Have many mitochondria
- Secrete intrinsic factor of Castle

Answer: F F T T T

Explanations:

- Parietal (oxyntic) cells produce hydrochloric acid (HCl) and are present among the mucous neck cells and throughout deeper parts of the gland.
- The cytoplasm is intensely eosinophilic due to the high density of mitochondria
- A striking ultrastructural feature of an active parietal cell is a deep, circular invagination of the apical plasma membrane to form an intracellular canaliculus with a large surface area produced by thousands of microvilli.
- The abundant mitochondria provide energy primarily for operating the cells' ion pumps.
- Parietal cells also secrete intrinsic factor, a glycoprotein required for uptake of vitamin B12 in the small intestine.
- Parietal cell secretory activity is stimulated both by parasympathetic innervation and by paracrine release of histamine and the polypeptide gastrin from enteroendocrine cells.

(*Ref: Junqueira's basic histology/ p-310*)

67. Both Meissner's and Auerbach's plexuses are present in the (*Residency March 2020*)

- Colon
- Pharynx
- Small intestine
- Stomach
- Upper 1/3rd of the esophagus

Answer: T F T T F

(*Ref: Snell/8th /P-394*)

68. Parietal cells of the stomach (*Residency March 2016*)

- Are found at the basal aspect of the gastric glands
- Are large polyhedral cells
- Are mesodermal in origin
- Possess basophilic cytoplasm
- Secrete HCl

Answer: F T F F T

Explanation:

- Are mostly found at the body of the gastric glands
- Endodermal
- Eosinophilic cytoplasm due to abundant mitochondria
- Secrete HCl

These are large polyhedral cells, possess acidophilic cytoplasm, arranged discretely along the gland tubes and are sandwiched between the basement membrane and adjacent zymogenic cells
(*Ref: Selim Reza/v-2/18th/P-522*)

Thymus Gland

69. Thymus (*Residency March 2024*)

- Develops from third pharyngeal pouch
- Is devoid of nerve fibers
- Is identified histologically by lymphatic nodule
- Receives arterial supply from the internal thoracic artery
- Is contained in the anterior mediastinum

Answer: T F F T T

Explanation

- Has fibers from vagus & Inferior cervical ganglion
- Is diagnosed microscopically by Hassall's corpuscles
- Artery supply from the inferior thyroid & internal thoracic artery
- Thymus is present in both superior & anterior mediastinum anterior mediastinum contains many structures

(*Ref: BD /Vol-3,134/P-151*)

GP & Respiratory Physiology

General Physiology

01. The steady state potential of (Residency March 2024)

- a) Neuron is -60 mv to -70 mv
- b) Erythrocyte is -15 mv to -40 mv
- e) Astrocyte is -80 mv to -90 mv
- d) Skeletal muscle is -60 mv to -70 mv
- e) Cochlear hair cell is -8 mv to -12 mv

Answer: **T F T F F**

Explanation:

- B- Hair cell -15 to -40mv
- D- Skeletal muscle - 95 mv

Cell type	Resting Potential
Skeletal muscle	-85 to -95
Cardiac muscle	-80 to -90
Astrocyte	-80 to -90

Neurons	-60 to -70
Smooth muscle	-50 to -60
Hair cell (cochlea)	-45 to -60
Photoreceptor cell	-40 (dark) to -70 (light)
Erythrocyte	-8 to -12

(Ref: Guyton 15th/T: 5-1/P-64)

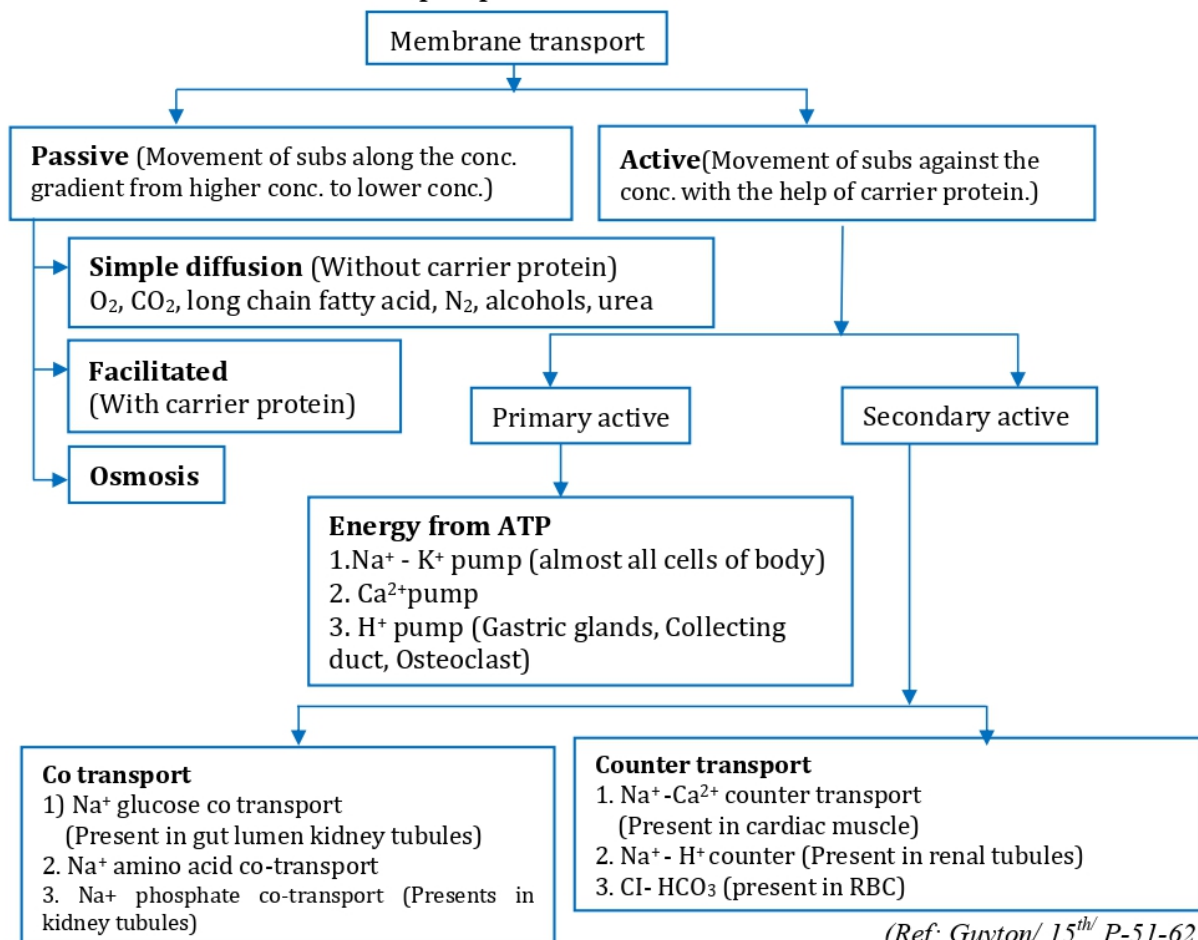
02. Substances that enter cells by simple diffusion are (Residency March 2023)

- a) Glucose
- b) Oxygen
- c) Carbon dioxide
- d) Amino acid
- e) Nitrogen

Answer: **F T T F T**

Explanation: Classification

Transport processes for macromolecules:



(Ref: Guyton/ 15th/ P-51-62)

Platelet

06. Platelets contribute to haemostasis by liberating- (Residency March 2024)

- a) 5-hydroxytryptamine
- b) Phospholipids
- c) Plasminogen
- d) Bradykinin
- e) Calcitonin

Answer: T T F F F

Explanation:

Functions of platelet:

Hemostasis:

1. **Vasoconstriction:** 5 HT, TxA₂

2. **Platelet plug**

3. **Blood coagulation:**

ADP, platelet thromboplastin, phospholipid helps in formation of prothrombin activator & Blood coagulation

Clot retraction: thrombosthenin of platelet helps in clot retraction

Platelet activators: ADP, epinephrine, thrombin, collagen

Potent Platelet activators: Collagen, Thrombin

Factors causing plated aggregation

- Thromboxane A₂
- VwF
- ADP
- Fibrinogen

07. Bleeding from a small cut in the skin (Residency March 2024, 2026)

- a) Is normally diminished by local vascular spasm
- b) Ceases within about 5 minutes in normal people
- c) Is prolonged in severe factor VIII deficiency
- d) Is lower in warm skin than cold skin
- e) Is reduced if the affected limb is elevated

Answer: T T T F T

Explanation:

- A. True Due to the effects of tissue damage and serotonin on vascular smooth muscle.
- B. True This is the upper limit of the normal 'bleeding time'.
- C. False Factor VIII increases clotting time not bleeding time.
- D. True Warmth dilates skin blood vessels.
- E. True Intravascular pressure is reduced in an elevated limb.

(Ref: Guyton/15th/P-487)

08. Platelets produce and Secrete (Residency March 2020)

- a) Plasminogen
- b) Thromboplastin
- c) Thromboxane A₂
- d) Prothrombin
- e) Kallikrein

Answer: F F T F (Produced by liver) **F**

Explanation:

α-granule

- Fibrinogen
- Fibronectin
- Factor I, V & VIII
- Platelet factor -VI
- Platelet derived growth factor (PDGF)
- Transforming growth factor B

Dense granule: SAAC

- ATP
- ADP
- Ionized calcium
- Histamine
- Serotonin
- Epinephrine

Lambda granule

- Acid hydrolase

From membrane:

- Thromboxane A₂-important for amplifying platelet aggregation

(Ref: Ganong/27th /P-90)

09. Following products are helpful in platelet aggregation (Residency March 2014)

- a) Thrombin
- b) Platelet derived growth factor
- c) Von Willebrand factor
- d) ADP
- e) Thromboxane A₂

Answer: F F T T T

Explanation:

- a. Cause activation, not aggregation
- Factors causing platelet aggregation
- Thromboxane A₂
 - Von Willebrand factor
 - ADP
 - Fibrinogen

(Ref: Davidson's/24th/P-927, 928)

60. Haemoglobinopathies include (Residency March 2012)

- a) Exocytosis
- b) Hereditary spherocytosis
- c) Thalassemia
- d) Hereditary Elliptocytosis
- e) Sickle cell anemia

Answer: F F T F T

Explanation:

Hemoglobinopathies:

- Thalassemia
- Hb S, C, E, D disease
- Sickle cell disease

RBC membrane defect:

- Hereditary spherocytosis
- Hereditary elliptocytosis

(Ref: Davidson's/ 24th/ P-959)

Anemia

61. Microcytic hypochromic anaemia includes (Residency March 2023)

- a) Aplastic anaemia
- b) Thalassemia
- c) Sickle cell anaemia
- d) Sideroblastic anaemia
- e) Iron deficiency anemia

Answer: F T F T T

(Ref: Davidson's/24th/ P-931/Box: 25.2)

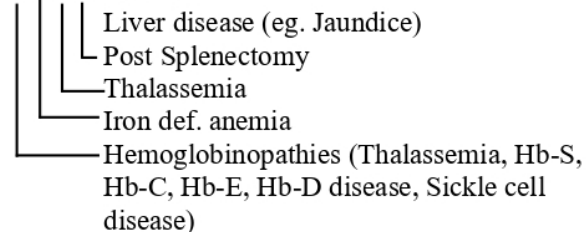
62. Target cells are appeared in the peripheral blood film of (Residency March 2023)

- a) Thalassaemia
- b) Sickle cell anaemia
- c) Aplastic anaemia
- d) Pernicious anaemia
- e) Iron deficiency anaemia

Answer: T T F F T

Explanation: Mnemonics

H I T S Liver



(Ref: Davidson's/24th/ P-931/Box: 25.2 +Khaleque's/ P-218)

63. Microcytic hypochromic anemia can be found in (Residency March 2019)

- a) Iron deficiency anemia
- b) Thalassemia
- c) Hypothyroidism
- d) Sideroblastic anemia
- e) Evan's syndrome

Answer: T T F T F

Explanation:

- **Evan's syndrome:** Autoimmune hemolytic anemia and thrombocytopenia (Ref: Davidson's /24th / P-931/Box-25.2)

64. Microcytic hypochromic anemia is found in the following (Residency 2018)

- a) Iron deficiency anemia
- b) Aplastic anemia
- c) Sideroblastic anemia
- d) Chronic myeloid leukemia
- e) Thalassemia

Answer: T F T F T

Explanation: Other causes of Microcytic hypochromic anemia:

1. Lead poisoning
2. Anemia of chronic disease

(Ref: Davidson's/24th/ P-931/Box: 25.2)

65. A 25-year-old woman with 30 weeks pregnancy developed pallor and her blood report shows hemoglobin: 7.5 gm/dl, MCV: 65 fl, MCH: 18 pg, for further evaluation of her anemia required investigations include (Residency March 2017)

- a) Serum ferritin
- b) Serum iron
- c) Serum protein electrophoresis
- d) Total iron binding capacity
- e) Soluble transferrin receptor assay

Answer: T T F T T

(Ref: Davidson's /24th /P-952/ Box- 25.30)

66. Following conditions may show microcytic hypochromic blood picture (Residency March 2017)

- a) Hb-E disease
- b) Lead poisoning
- c) Pernicious anemia
- d) Hypothyroidism
- e) Sideroblastic anemia

Answer: T T F F T

Hemolytic Anemia

74. Features of hemolysis in peripheral blood film include (Residency March 2011)

- a) Polychromatic cells
- b) Severe hypochromic cells
- c) Micro spherocytes
- d) Fragmented red cells
- e) Teardrop and pencil shaped cells

Answer: T F T T F

Explanation:

Investigation results indicating active haemolysis

Hallmarks of haemolysis

- ↓Haemoglobin
- ↑Unconjugated bilirubin
- ↑Lactate dehydrogenase
- ↑Reticulocytes
- ↑Urinary urobilinogen

Additional feature sof intravascular haemolysis

- ↓Haptoglobin
- ↑Methaemalbumin
- Positive urinary haemosiderin
- Haemoglobinuria

(Ref: Davidson's/24th/P-955/Box-25.36)

75. Features of hemolytic anemia include (Residency March 2013)

- a) Microcytic blood picture
- b) Increased reticulocyte count
- c) Increased conjugated bilirubin
- d) Reduced haptoglobin
- e) Raised LDH

Answer: F T F T T

(Ref: Davidson's/24th/P-955/Box-25.36)

Coombs Test

76. Coombs test is positive in (Residency March 2019)

- a) Autoimmune hemolytic anemia
- b) Transfusion reaction
- c) Cold agglutinin disease
- d) Hemophilia
- e) Mismatched blood transfusion

Answer: T T T F T

(Ref: Davidson's /24th /P-956/Fig-25.22)

77. Direct Comb's test is positive in (Residency March 2016)

- a) Systemic lupus erythematosus
- b) Hemolytic transfusion reaction
- c) Hemolytic disease of newborn
- d) Micro-angiopathic hemolytic anemia
- e) Paroxysmal nocturnal hemoglobinuria

Answer: T T T F F

Explanation:

Direct coombs Test:	Indirect coombs Test:
Detects the presence of antibody bound to the red cell surface e.g.	Detects antibodies in the plasma e.g
1. Autoimmune hemolytic anemia	1. Antibody screen in pre-transfusion testing
2. Hemolytic disease of newborn	2. Screening in pregnancy for antibodies that may cause hemolytic disease of newborn
3. Transfusion reactions	

(Ref: Davidson's /24th /P-956/Fig-25.22)

78. Coombs test is used for detecting (Residency March 2011)

- a) ANF
- b) Rh-antibody
- c) Rh-factor
- d) Hemolytic autoantibody
- e) Coldagglutinin

Answer: F T F T T

(Ref: Davidson's /24th /P-956/Fig-25.22)

Thalassemia

79. Thalassemia major (Residency March 2015)

- a) Is a hereditary disease
- b) Is due to anomaly in chromosome 16
- c) Can be diagnosed by hemoglobin electrophoresis
- d) Is incurable
- e) Patients rarely survive beyond 5 years without treatment

Answer: T T T F T

(Ref: Davidson's/24th /P-962)

Visual Problem

58. The chemicals involved in photon perception by rod is/are (*Residency March 2026*)

- 11-cis retinol
- G-protein transducin
- cAMP phosphodiesterase
- Rhodopsin kinase
- Metarhodopsin-I

Answer: F T F F F

Explanation:

- The photopigment uses 11-cis retinal (aldehyde form) Not Retinol (alcohol form)
- Metarhodopsin –II activate Transducin.
- Light stimulate cGMP phosphodiesterase. Not cAMP.
- It doesn't take part in photon perception. It used for inactivation.
- (Metarhodopsin – II) (Not – I) is the active form that start phototransduction.
(Ref: Guyton/15th/P-651,652)

59. Causes of optic atrophy include (*Diploma July 2019*)

- Hypertension
- Type II diabetes meliitus
- Optic neuritis
- Long standing papilloedema
- Friedrich's ataxia

Answer: F F T T T

(Ref: Davidson/24th/P-1092, 1093)

60. Hyperopia is usually caused by (*Residency March 2020*)

- Lens system focuses the object behind the retina
- Uneven curvature of the cornea
- Eyeball that is shorter than normal
- Lens system focuses the object in front of the retina
- Decreased power of accommodation of lens

Answer: T T T F T

Explanation:

Hyperopia is caused by

- ✓ Eyeball is shorter than normal
- ✓ Parallel rays of light are brought to a focus behind the retina

- ✓ Relationship between accommodation and convergence is broken
- ✓ Uneven/flat curvature of cornea
- ✓ Decreased power of accommodation of lens
(Ref: Vision physiology/ 9th / P-565/ Ganong/27th /P-188,189)

61. Hyperopia is caused by (*Residency March 2018*)

- Lens system that focuses the object behind the retina
- Uneven curvature of the cornea
- Eyeball that is shorter than normal
- Lens whose refractive power is more than normal
- Lens whose power of accommodation is more than normal

Answer: T F T F F

Explanation:

- Decrease in the curvature of refracting surface of the cornea
- Decrease refractive index of the lens
(Ref: Vision Physiology/9th/P-565)

Auditory Pathway

62. The hair cells of semicircular canals are stimulated by (*Residency March 2019*)

- Linear acceleration
- Rotation at a constant velocity
- Rotational acceleration
- Cessation of rotation
- Changes in gravitational pull

Answer: F F T T F

(Ref: Roddie/Q-355)

63. The hair cells of the semicircular canals are stimulated by (*Residency 2017*)

- Linear acceleration
- Rotation at constant velocity
- Cessation of rotation
- Rotational acceleration
- Changes in gravitational pull

Answer: F F T T F

Explanation:

- Angular acceleration
- Gravity produces linear acceleration
(Ref: Roddie/6th /Q-355)

Visual Field defect

34. Causes of miosis is/are (Diploma July 2024)

- Argyll-Robertson pupil
- 3rd nerve palsy
- Holmes- Adie pupil
- Horner's syndrome
- Marcus- Gunn pupil

Answer: T F T T F

Explanation:

Causes of Miosis-

- Physiological causes
- Medications- Morphine, Cholinergic agents
- Angle closure glaucoma, Iritis
- Neurological disorder: Horner syndrome, Holmes adie pupil
- Head trauma, Infections (HZ)
- Toxin, poisons, Addisons disease
- ciliary spasm

35. Right homonymous hemianopia usually results from damage to the (Diploma 2018)

- Left optic tract
- Optic chiasma
- Right lateral geniculate body
- Left optic nerve
- Left optic radiation

Answer: T F F F T

	Normal	Tuberculous meningitis
Pressure	50-250 mm of water	Normal/increased
Colour	Clear	Clear/cloudy
Red cell count (x 10 ⁶ /L)	0-4	Normal
White cell count (x 10 ⁶ /L)	0-4	50-5000 lymphocytes
Glucose	50-60% of blood level	Decreased
Protein	<0.45 g/L	Increased
Microbiology	Sterile	Ziehl-Neelsen/auramine stain or tuberculosis culture positive
Oligoclonal bands	Negative	Can be positive

(Ref: Davidson's/24th/Box-28.6/P-1135)

CSF

38. CSF is principally secreted by (Diploma July 2023)

- Arachnoid granulation
- Choroid plexus
- Glial cells
- Ependymal cells
- Dural venous sinuses

Answer: F T F T F

Explanation:

- Bitemporal
 - Left homonymous hemianopia
 - Left sided complete blindness
- (Ref: Davidson's/24th/Box-28.7/P-1127)

Meningitis

36. CSF changes in tuberculous meningitis include (Diploma July 2017)

- Elevated pressure
- Raised adenosine deaminase (ADA) level
- Cell count 10,000 – 20,000/mm³
- Protein>50mg/dL
- Glucose-50-70% of serum glucose

Answer: T T F F F

(Ref: Davidson's/24th/Box-28.6/P-1135)

37. CSF findings in tubercular meningitis are (Diploma July 2012)

- Straw colour fluid
- Increased lymphocyte count
- Reduced protein level
- Raised glucose level
- Presence of cob web

Answer: T T F F T

Explanation:

39. Cerebrospinal fluid (Diploma July 2023)

- Is actively secreted by the choroid plexus
- Contains virtually no glucose
- Has a higher chloride level than plasma
- Has the same potassium ion level as arterial blood
- Is the major nutrition source of the brain

Answer: T F T F F

Endocrine Physiology

Hormone & Classification

01. Hormone(s) that act through cAMP (Second messenger system) is/are (Residency March 2026)

- a) 1,25-dihydroxycholecalciferol
- b) Antidiuretic hormone
- c) Luteinizing hormone
- d) Parathyroid hormone
- e) Progesterone

Answer: F T T T F

Explanation:

(a + e) are steroid hormone.

Location of steroid hormone receptors on cytoplasm.

(Ref: Guyton/15th/P- 943)

02. Steroid containing substance/s is/are (Residency March 2024)

- a) Adreno medullary hormone
- b) Bile salt
- c) Cholesterol
- d) Vitamin A
- e) Vitamin D

Answer: F T T F T

Explanation:

Classification of Hormones According to the chemical nature:

1. Protein (100 or more amino acids)	<ul style="list-style-type: none"> • Growth hormone (GH) • Prolactin (PRL) • Human placental lactogen (HPL)
2. Polypeptide (fewer than 100 amino acids)	<ul style="list-style-type: none"> • Thyrotropin releasing hormone (TRH) • Gonadotropin releasing hormone (GnRH) • Somatostatin • Vasopressin
3. Glycoprotein (composed of carbohydrate and Protein)	<ul style="list-style-type: none"> • Follicle stimulating hormone (FSH) • Thyroid stimulating hormone (TSH) • Luteinizing hormone (LH) • Human chorionic gonadotrophin (hCG)
4. Steroid hormone	<ul style="list-style-type: none"> • Adrenocortical hormones (Cortisol, aldosterone) • Sex hormone • Androgen, e.g. Testosterone, Androstenedione • Estrogen, e.g. Estradiol, Estrone • Progesterone • 1.25 dihydroxycholecalciferol (calcitriol)
5. Derivatives of Amine acid tyrosine	<ul style="list-style-type: none"> • Thyroid hormones: Thyroxin (T₄) & Tri-iodothyronine (T₃) • Adrenal medullary hormone: Epinephrine, nor-epinephrine and Dopamine

03. Amino acid derivative hormones are (Residency March 2019)

- a) Antidiuretic hormone
- b) Thyroxine
- c) Catecholamines
- d) TSH
- e) Dopamine

Answer: F T T F T

(Ref: Guyton/15th/ P- 937)

04. Hormones acting via cAMP are (Residency March 2018)

- a) TSH
- b) Calcitriol
- c) Testosterone
- d) ADH
- e) Parathormone

Answer: T F F T T

SIADH diagnosis:

Diagnosis
<ul style="list-style-type: none"> • Low plasma sodium concentration (typically <130 mmol/L) • Low plasma osmolality (<275 mOsmol/kg) • Urine osmolality not minimally low (typically >100 mOsmol/kg) • Urine sodium concentration not minimally low (>30 mmol/L) • Low-normal plasma urea, creatinine, uric acid • Clinical euvolaemia • Absence of adrenal, thyroid, pituitary or renal insufficiency • No recent use of diuretics • Exclusion of other causes of hyponatraemia • Appropriate clinical context (above)

(Ref: Davidson's 24th/P- 614)

14. Antidiuretic hormone (ADH) secretion is (Residency March 2018)

- Inhibited by expansion of right atrium
- Stimulated by alcohol
- Increased in dehydration
- Stimulated by increased blood pressure
- Stimulated by plasma hyperosmolality

Answer: T F T F T

Explanation:

Secretion of ADH increased by
<ul style="list-style-type: none"> • Increased effective osmotic pressure of plasma • Decreased ECF volume • Pain, emotion, stress exercise • Nausea and vomiting • Standing • Clofibrate, carbamazepine, Morphine, Nicotine, Cyclophosphamide • Angiotensin II

Secretion of ADH Decreased By
<ul style="list-style-type: none"> • Decreased effective osmotic pressure of plasma • Increased ECF volume • Alcohol, Clonidine, Haloperidol

(Ref: Ganong's / 27th /P-719/ T-38.1)

15. Secretion of ADH is decreased by (Residency March 2017)

- Stretching of right atrial stretch receptor
- An increase in blood volume
- Angiotensin II
- Alcohol
- An increase in plasma osmolality

Answer: T T F T F

(Ref: Ganong's' 27th /P-719/ T-38.1)

16. Secretion of anti-diuretic hormone is inhibited by (Residency March 2016)

- Emotional stress
- Nicotine
- Alcohol
- Morphine
- Acetylcholine

Answer: F F T F F

(Ref: Ganong's/ 27th -P-719/ T-38.1)

Thyroid Hormones

17. Effect(s) of thyroid hormones on fat metabolism is/are to (Residency march-2026)

- Decrease cholesterol secretion in the bile
- Decrease plasma cholesterol
- Increase LDL receptors on hepatocytes
- Increase triglyceride level
- Remove LDL from the plasma

Answer: F T T F T

Explanation:

- ↑ cholesterol catabolism secretion in bile.
- Thyroid hormone causes increase breakdown of TG.

(Ref: Guyton/15th/P – 970)

18. TSH increases (Residency March 2019)

- Number of thyroid cells
- Size of thyroid cells
- Organification of tyrosine
- Synthesis of thyroglobulin
- Activity of iodide pump

Answer: T T T T T (Proteolysis of TG synthesis & TG (Both) T

Explanation:

Specific effects of TSH on the thyroid gland are as follows:

- Increased proteolysis of the thyroglobulin that has already been stored in the follicles, with resultant release of the thyroid hormones into the circulating blood and diminishment of the follicular substance itself.
- Increased activity of the iodide pump, which increases the rate of "iodide trapping" in the glandular cells, sometimes increasing the ratio of intracellular to extracellular iodide concentration in the glandular substance to as much as eight times normal
- Increased iodination of tyrosine to form the thyroid hormones
- Increased size and increased secretory activity of the thyroid cells

28. Functions of parathormone are
(Residency March 2012)

- Increase absorption of Ca^{++} from intestine
- Increase resorption of Ca^{2+} from bone
- Decrease resorption of phosphate from bone
- Decrease phosphate reabsorption from kidney
- Increase reabsorption of Ca^{2+} from kidney

Answer: **T T F T T**

(Ref: ABC Biochemistry/6th /P-530)

Pituitary

29. A 10-year-old boy with deficient anterior pituitary function is likely to
(Residency March 2024)

- Reach puberty at normal age
- Be of short stature with normal body proportions
- Be in constant danger of becoming dehydrated
- Have a normal basal metabolic rate
- Have normal IQ

Answer: **F T T F F**

Explanation:

- A**, b-GH deficiency
c- posterior pituitary
d, e-thyroid hormone deficiency

30. A pituitary tumor secreting excess growth hormone in an adult may lead to
(Residency March 2024)

- Homonymous hemianopia
- Gigantism
- Reduced levels of somatomedins in blood
- Enlargement of the liver
- A raised blood glucose level

Answer: **F F F T T**

Explanation:

Acromegaly Definition: It is the condition resulting from hypersecretion of growth hormone after the union of epiphysis & diaphysis.

Cause: Acidophilic tumor of pituitary gland.

Clinical features:

A. Skeletal changes:

- Enlargement of hands and feet.
- Protrusion of lower jaw
- Prominent supraorbital ridges
- Kyphosis

B. Soft tissue changes:

- Skin thickening
- Enlargement of lips, nose, tongue
- Enlargement of thyroid gland, heart, liver
- Increased heel pad thickness

C. Metabolic effects:

- Glucose intolerance (25%)
- Diabetes mellitus (10%)
- Hypertension (25%)
- Glycosuria
- Dyslipidemia

Calcium Homeostasis

31. Plasma calcium level is regulated by
(Residency March-2026)

- Calcitriol
- Calcitonin
- Cortisol
- Parathormone
- Growth hormone

Answer: **T T F T F**

Explanation:

(c + e) → not regulated calcium level.

32. 1, 25 dihydroxycholecalciferol increases intestinal absorption of calcium ion by activating
(Residency March 2020)

- Calcium binding protein
- Protein kinase C
- Alkaline phosphatase
- Adenyl cyclase
- Calcium ATPase

Answer: **T F F F T**

Explanation:

Ca^{++} absorption is done by Ca^{++} binding protein (calbindin-D) also includes calmodulin which is facilitated by active form of vit-D.

(Ref: Ganong/27th / P-390)

51. Serum total cortisol is high in (Residency March 2012)

- a) Pregnancy
- b) Congenital adrenal hyperplasia
- c) On long term benzodiazepine therapy
- d) Primary hyperaldosteronism
- e) Cushing's syndrome

Answer: T F F F T

Explanation:

- a) Cortisol binds with cortisol binding globulin (transcortin) in blood. During pregnancy after ingestion of OCP CBG increases. So total cortisol increases
- b) In CAH: cortisol level decreases
- c) No effect on total cortisol
- e) Hypersecretion of cortisol occurs
(Ref: Guyton /15th / P-993)

52. Cortisol plays a permissive role in the (Residency March 2012)

- a) Calorigenic effects of glucagon
- b) Lipolytic effect of glucagon
- c) Lipolytic effect of catecholamines
- e) Vasopressor effect of catecholamines
- e) Stabilization of lysosome membrane

Answer: T F T T F

Explanation:

- Cortisol plays a permissive role for glucagon, catecholamine as well as for growth hormone.
- That means in presence of small amount of cortisol will augment the normal physiological action of mentioned hormone.
- Lipolytic, bronchodilation & pressure responsive to catecholamine
(Ref: Ganong's / 27th / P-361)

53. Side effects of corticosteroids are (Residency March 2012)

- a) Gum hyperplasia
- b) Impaired glomerular filtration rate
- c) Hypertension
- d) Psychosis
- e) Osteopenia

Answer: F F T T T

Explanation:

Side effects of steroids are like features of Cushing syndrome
(Ref: Vision pharmacology /7th /P-356)

Insulin

54. Insulin (Residency March-2026)

- a) Is a steroid hormone
- b) Inhibits ketogenesis
- c) Promotes glycogenolysis
- d) Stimulates lipogenesis in adipocytes
- e) Stimulates potassium influx into cell

Answer: F T F T T

Explanation:

- a. Insulin is a protein hormone.
- b. Inhibits glycogenolysis
(Ref: Guyton & Hall (15th edition) page – 999)

55. Insulin is not needed for glucose uptake in (Residency March 2024)

- a) Adipocyte
- b) RBC
- c) Renal tubular cell
- d) Muscle cell
- e) Pancreatic B-cell

Answer: F T T F T

Explanation:

Insulin insensitive cells; the cells where insulin plays no role for glucose uptake.

1. RBC
2. Neuron
3. Renal tubular cell,
4. Hepatocyte
5. Enterocyte
6. Pancreatic B-cell
7. Leukocytes
8. Placenta,
9. Retinal cell
10. Lens & cornea

56. Insulin reduces blood glucose level by increasing (Residency March 2024)

- a) Peripheral uptake of glucose
- b) Glycogenesis
- e) Gluconeogenesis
- d) Storage of glycogen into liver
- e) Amino acid from muscles

Answer: T T F T F

Explanation:

Principal Actions of Insulin

Rapid action (within seconds)

- ✓ Increase transport of glucose, amino acid and K⁺ into
- ✓ Insulin sensitive cells

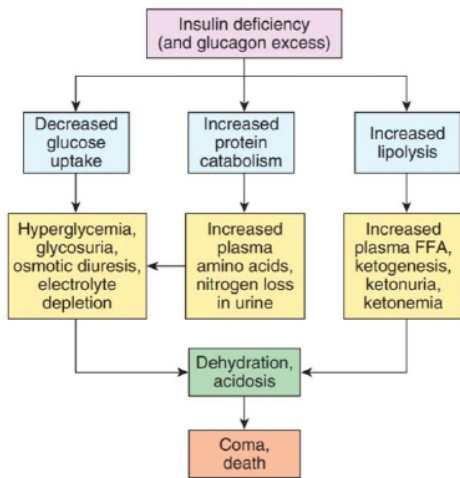


FIGURE 24-9 Effects of insulin deficiency. FFA, free fatty acids. (Used with permission of RJ Havel.)

(Ref: Guyton/15th/P-1012)

74. Blood glucose level is increased by (Residency March 2018)

- a) Glucagon
- b) Aldosterone
- c) Catecholamine
- d) Cortisol
- e) Parathyroid hormone

Answer: T F T T F

Explanation:

- Glucagon,
- Catecholamines,
- Thyroid hormones
- Glucocorticoids,
- GH increase blood glucose level
- Aldosterone & parathyroid hormone has no role on glucose level

(Ref: Guyton/15th/P-1010)

75. Hyperosmolar non-ketotic coma is characterized by (Residency March 2018)

- a) Moderate to severe acidosis
- b) Hyperventilation
- c) Severe dehydration
- d) Very high plasma glucose level
- e) Ketonemia

Answer: F F T T F

Explanation:

- a) Without significant acidosis
- b) It occurs in ketoacidosis
- e) No significant ketonemia (<3mmol/L)

(Ref: Davidson's/24th/P-723)

76. Diagnostic criteria for diabetes mellitus are (Residency March 2018)

- a) HbA1c $\geq 6.5\%$
- b) Fasting plasma glucose ≥ 7.8 mmol/L.
- c) 2-hour plasma glucose ≥ 11.1 mmol/L during oral glucose tolerance test
- d) Presence of glucose in the urine
- e) Presence of ketone bodies in the urine

Answer: T F T F F

Explanation:

Diagnosis of diabetes and pre-diabetes

Diabetes is confirmed by:

- Either plasma glucose in random sample or 2 hrs after a 75g glucose load ≥ 11.1 mmol/L (200 mg/dL) or
- Fasting plasma glucose ≥ 7.0 mmol/L (126 mg/dL) or
- HbA1c ≥ 48 mmol/mol
- In asymptomatic patients, two diagnostic tests are required to confirm diabetes; the second test should be the same as the first test to avoid confusion

Pre-diabetes' is classified as:

- ✓ Impaired fasting glucose = fasting plasma glucose ≥ 6.1 mmol/L (110 mg/dL) and <7.0 mmol/L (126 mg/dL)
- ✓ Impaired glucose tolerance fasting plasma glucose <7.0 mmol/L (126mg /dL) and 2-hr glucose after 75 g oral glucose drink 7.8–11.1 mmol/L (140–200 mg/dL)
- ✓ HbA1c criteria for pre-diabetes vary. The National Institute for Health and Care Excellence (NICE) guidelines (UK) recommend considering an HbA1c range of 42–47 mmol/mol to be indicative of pre-diabetes; the American Diabetes Association (ADA) guidelines suggest a range of 39–47 mmol/mol. The ADA also suggests a lower fasting plasma glucose limit of ≥ 5.6 mmol/L (100 mg/dL) for impaired fasting glucose

(Ref: Davidson's/24th/P-710+Box-21.2)

77. In diabetic ketosis there is decreased breakdown of (Residency March 2017)

- a) Ketones
- b) Glycogen
- c) Glucose
- d) Fat
- e) Amino acid

Answer: F F T F F

(Ref: Roddie/6th/Q -490/P/ 207)

78. Severe uncontrolled diabetes mellitus leads to a raised (Residency March 2017)

- a) H⁺ ion concentration in body fluid
- b) Plasma K ion concentration
- c) Urinary specific gravity and osmolality
- d) Blood volume
- e) Arterial PCO₂

Answer: T T T F F

Diploma Question

Wall of thorax

36. During pleural fluid aspiration for cytology, a needle is usually inserted in the (Diploma July 2025)

- Midclavicular line in the 9th intercostal space
- Midaxillary line in the 10th intercostal space
- Midaxillary line in the 7th intercostal space
- Midaxillary line in the 9th intercostal space
- Midclavicular line in the 8th intercostal space

Answer: F T F T F

Explanation:

Aspiration of any fluid from the pleural cavity is called paracentesis thoracis. Paracentesis thoracis is done in the lower part of the intercostal space to avoid injury to the main intercostal vessels and nerve.

It is usually done in the eighth intercostal space in the midaxillary line. The needle is passed through the lower part of the space to avoid injury to the principal neurovascular bundle, i.e. vein, artery and nerve (VAN).

The costodiaphragmatic recess lies opposite the 8th–10th ribs in the mid-axillary line.

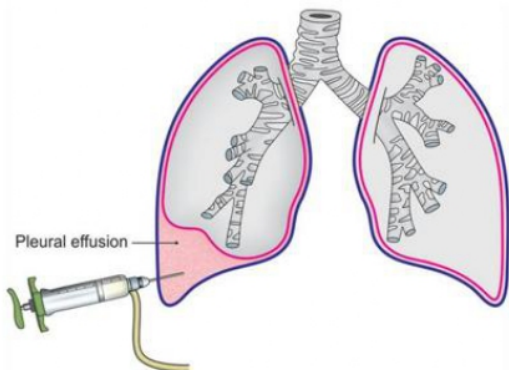


Fig. 15.9: Paracentesis thoracis

(Ref: *BD Chaurasia's*/8th/P-261)

37. Cervical Rib (Diploma July 2003)

- Originate from body of 1st rib
- Articulate with C7 transverse process
- Extends laterally and mat and in a blind pouch
- Symptom is proportionate to its size
- Relieving symptoms require extraperiosteal/ Sub-periosteal removal

Answer: F (transverse process of C7 or complete extra rib) **T T T T T**

Explanation:

Cervical rib:

- The costal element of the C7 vertebra may elongate to form a cervical rib in about 0.5% - 2% individuals.
- The condition may be unilateral or bilateral.
- It occurs more unilaterally and somewhat more frequently on the right side.
- The cervical rib may have a blind tip or the tip may be connected to the 1st rib by fibrous band or cartilage or bone.
- It may compress the lower trunk (T1) of brachial plexus and subclavian artery.

The compression produces:

- Pain along the medial side /ulnar border of the forearm and hand
- Disturbance in the circulation of the upper limb. Symptom is proportionate to its size. Relieving symptoms require extraperiosteal/Sub-periosteal removal of rib.

(Ref: *Vishram*/4th/V-1/P-199)

Lungs

38. The medial surface of the right lung is related to the (Diploma July 2021)

- Arch of the aorta
- Azygos vein
- Superior vena cava
- Oesophagus
- Descending aorta

Answer: F (left lung) **T T T F** (left lung)

Explanation: See question 08(residency march 2021)

(Ref: *Vishram*/4th/V-1/P-237)

39. Terminal bronchiole (Diploma July 2008)

- Contains goblet cell
- Contains clara cell
- Contains plates of cartilage
- Is lined by simple ciliated also non ciliated cuboidal+6al cell columnar epithelium
- Contains alveoli

Answer: F (present in conducting zone) **T F** (present in conducting zone) **F (also non ciliated cuboidal cell)** **F**-(present from respiratory bronchiole to downwards)

(Ref: *Junqueira's*/15th /P-356, 357+ *BD*/10th /V-1/P-240)

total volume of about 150 mL; this corresponds to a turnover time of about 5 hours.

Basal Ganglion

75. Lesion in the basal ganglion is associated with (Diploma July 2019)

- a) Hypotonia
- b) Tremor
- c) Low muscle power
- d) Rigidity
- e) Loss of all reflexes

Answer: F T F T F

76. Muscles are generally hypotonic (Diploma July 2014)

- a) When γ efferent discharge is high
- b) When the motor nerve to a muscle is cut
- c) In case of cerebellar lesion
- d) In case of extrapyramidal lesion
- e) In case of basal ganglia lesion

Answer: F T T F F

(Ref: Snell's 8th/P-166)

Lumbar Puncture

77. In lumbar disc herniation at L4/5 level (Diploma July 2025)

- a) Flexor hallucis will be weak
- b) Foraminal disc hernia will cause L4 nerve radiculopathy
- c) Gluteus muscle will be wasted
- d) Posterolateral herniation causes L5 nerve root irritation
- e) Spondylolisthesis L4 over L5 causes L4 nerve root radiculopathy

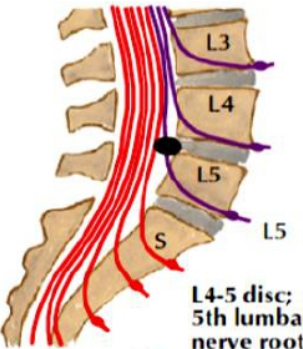
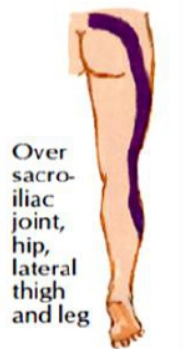
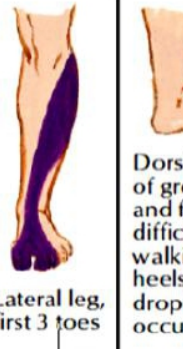
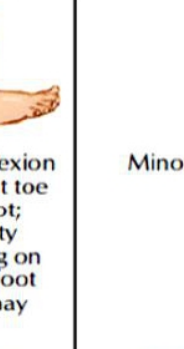

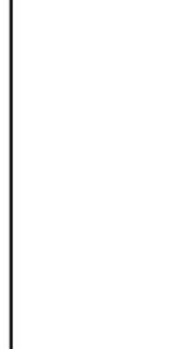
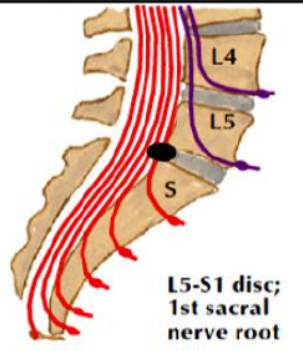
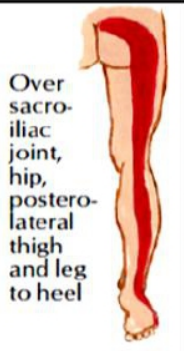
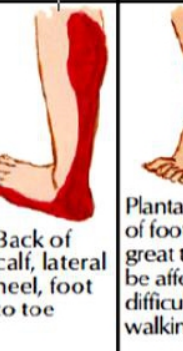
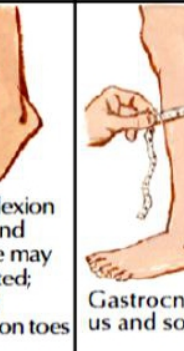
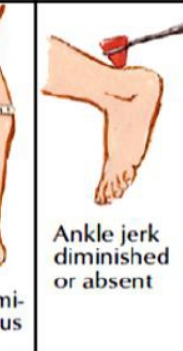
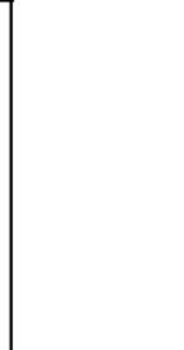
Answer: F T F T T

Explanation:

- PLID causes traversing root radiculopathy spondylolisthesis causes sexisting root radiculopathy

Common Symptoms:

- Lower back pain
- Pain radiating down the leg (sciatica)
- Numbness or tingling in the leg or foot
- Weakness in the muscles controlled by the affected nerves

Clinical features of herniated lumbar nucleus pulposus					
Level of herniation	Pain	Numbness	Weakness	Atrophy	Reflexes
 <p>L4-5 disc; 5th lumbar nerve root</p>	 <p>Over sacro-iliac joint, hip, lateral thigh and leg</p>	 <p>Lateral leg, first 3 toes</p>	 <p>Dorsiflexion of great toe and foot; difficulty walking on heels; foot drop may occur</p>	 <p>Minor</p>	 <p>Changes uncommon in knee and ankle jerks, but internal hamstring reflex diminished or absent</p>
 <p>L5-S1 disc; 1st sacral nerve root</p>	 <p>Over sacro-iliac joint, hip, postero-lateral thigh and leg to heel</p>	 <p>Back of calf, lateral heel, foot to toe</p>	 <p>Plantar flexion of foot and great toe may be affected; difficulty walking on toes</p>	 <p>Gastrocnemius and soleus</p>	 <p>Ankle jerk diminished or absent</p>

Diploma Question

Properties of Cardiac Muscle & Action Potential

01. Source(s) of Ca^{2+} for cardiac muscle contraction is/are (Diploma July 2025)

- Actin and myosin fiber
- Cytoplasmic fluid
- Endoplasmic reticulum
- Extracellular fluid
- Mitochondria

Answer: F F T T F

Explanation:

Cardiac muscle relies on Ca^{2+} release from the sarcoplasmic reticulum (specialized smooth endoplasmic reticulum) and influx of extracellular Ca^{2+} via L-type channels during the plateau phase of action potential.

This dual mechanism is critical for excitation-contraction coupling.

During radial action potentials

Depolarization opens voltage gated L-type calcium channels in the sarcolemma and T-tubules → Calcium enters the cytosol from the ECF contributing to calcium required for contraction → This influx act as the trigger for calcium induced calcium release from sarcoplasmic reticulum. Unlike skeletal muscle, cardiac muscle contraction is dependent on extracellular calcium.

(Ref: Guyton 15th /P-131)

02. Refractory period in the ventricle corresponds to the (Diploma July 2019, 2020)

- Period of ventricular contraction
- Period of ventricular action potential
- QRS complex of ECG
- PR interval of ECG
- ST segment of ECG

Answer: T T T F F

Explanation:

Interval	Events in the heart
P-R interval	Atrio-ventricular conduction/ Atrial depolarization
QRS complex	Ventricular depolarization/ ventricular contraction/refractory period
QT	Ventricular action potential
ST interval	Plateau portion of the ventricular action potential
R-T interval	Ventricular activation time

(Ref: C-C, chaterjee/ 11th/ P-247)

Blood Vessel & Circulation

03. The factors causing dilatation of blood vessels are (Diploma July 2011)

- Nitric oxide
- Endothelin-I
- Angiotensin-II
- Neuropeptide Y
- Prostacyclin

Answer: T F F F T

(Ref: Ganong/27th/P-604/Table-32.1)

04. Coronary vasodilators released during cardiac muscle ischemia are (Diploma 2010)

- Adenosine
- Potassium ion
- Sodium ion
- Bicarbonate ion

- Hydrogen ion

Answer: T T F F T

Explanation:

(c+d) → No role in coronary vasodilation.

Coronary vasodilators:

- Hypoxia
- Increased concentration of CO_2 , H^+ , K^+ , lactate, prostaglandins, adenine nucleotides and Adenosine
- Intracoronary inj. of cyanide

(Ref: Ganong/27th/T-32-1/P-604)

05. Angiotensin-II (Diploma July 2010)

- Is autacoid
- Is formed in lungs
- Is a vasodilator
- Increases tubular Na^+ reabsorption
- Increases baro-reflex sensitivity

Answer: T F F T F

Diploma Question

Hormone & Classification

01. Steroid nucleus is present in (Diploma July 2020)

- a) Phospholipid
- b) Prostaglandin
- c) Glycosaminoglycan
- d) Cholecalciferol
- e) Cholic acid

Answer: F F F T T

(Ref: Guyton/15th/P-938/ Vision /9th /P-260)

02. Steroid nucleus is present in (Diploma July 2019)

- a) Prostaglandin
- b) Sphingolipid
- c) Cholesterol
- d) Cortisol
- e) Calcitriol

Answer: F F T T T

Explanation:

Steroid nucleus present in:

- Adrenal cortex-Cortisol, Aldosterone
- Ovaries-Estrogen, Progesterone
- Testes-Testosterone, Progesterone and Calcitriol
- Retinoic Acid

(Ref: Guyton/15th/P-938)

03. Hormones which have intracellular receptor are (Diploma July 2016)

- a) Insulin
- b) Glucocorticoids
- c) Progesterone
- d) Thyroid stimulating hormone
- e) Glucagon

Answer: F T T F F

Explanation:

- Steroid and thyroid hormones have intracellular receptor.
- Hormone acts on cell membrane

(Ref: Guyton/15th/P-942-943)

04. Hormones those use the phospholipase C second messenger system are (Diploma July 2015, 2014)

- a) Oxytocin
- b) Growth hormone
- c) Thyrotropin releasing hormone
- d) Glucagon
- e) Vasopressin

Answer: T F T F T

Explanation:

- b) Growth hormone uses tyrosine kinase signaling

- d) Through G Protein coupled receptor

(Ref: Guyton/15th/Table-75-4/P-943)

05. Hormones exert their effect via formation of cAMP are (Diploma July 2014)

- a) Insulin
- b) ADH
- c) Growth hormone
- d) Aldosterone
- e) Calcitriol

Answer: F T F F F

Explanation:

(a+c) → Insulin & GH uses tyrosine kinase signaling, GH

(d+e) → Aldosterone and calcitriol are steroid hormone that works through intracellular receptor and activation of genes.

(Ref: Guyton/15th/P-943T-75.3)

06. Following hormones act through the 2nd messenger system (Diploma July 2014)

- a) Androgens
- b) ADH
- c) Calcitriol
- d) Calcitonin
- e) Thyroid hormones

Answer: F T F T F

Explanation:

(a+c+e) → Directly binds through intracellular hormone receptor

(Ref: Guyton/15th/P-942-943)

32. The physiological effects of thyroid hormones are the following (Diploma July 2010)

- Simulation of O₂ consumption by anterior pituitary
- Decrease in protein breakdown in muscle
- Simulation of formation LDL receptors
- Increase in rate of brain development
- Simulation of normal brain development

Answer: F F T T T

Explanation:

Thyroid Hormone stimulated O₂ consumption by metabolically active tissue except (LATUS) lymph node, Ant. pituitary, Testis, uterus, spleen, brain.

(Ref: Guyton/15th/P-968)

33. Parathormone (Diploma July 2008)

- Is produced by the C-cells of the thyroid gland
- Decreases urinary excretion of calcium
- Level in the blood increases when serum calcium falls
- Depresses activity of the anterior pituitary
- Is independent of magnesium level

Answer: F T T F T

(Ref: Ganong/27th/P-390)

Vitamin-D, Calcium homeostasis & Metabolism

34. Vitamin-D (Diploma July 2023)

- Is a steroid hormone
- Undergoes 25 hydroxylation in the kidney
- Is stored in the liver
- Undergoes 1-alpha- hydroxylation in the liver
- Its synthesis is influenced by cortisol

Answer: T F T F F (kidney) **F** (use, decrease receptor)

35. Hypercalcaemia is associated with (Diploma July 2023)

- Diarrhoea
- Increased excitability of the neuromuscular apparatus
- Polyuria
- Prolonged Q-T interval
- Peptic ulceration

Answer: F T T F F

36. Causes of hypercalcaemia are (Diploma July 2021)

- Cushing's syndrome
- Hypothyroidism
- Primary hyperparathyroidism
- Tuberculosis
- Vitamin D Deficiency

Answer: F F T T F

Explanation:

- It causes osteoporosis but in rare case, can cause hypocalcaemia
- Thyrotoxicosis
- Vit-D intoxication

Causes of hypercalcemia:

With normal or elevated (i.e. inappropriate) PTH levels

- Primary or tertiary hyperparathyroidism
- Lithium-induced hyperparathyroidism
- Familial hypocalciuric hypercalcemia *with low (i.e. suppressed) PTH levels*
- Malignancy (e.g. lung, breast, renal, ovarian, colonic and thyroid carcinoma, lymphoma, multiple myeloma)
- Elevated 1,25(OH)₂ vitamin D (vitamin D intoxication, sarcoidosis, HIV, other granulomatous disease)
- Thyrotoxicosis Paget's disease with immobilization
- Milk-alkali syndrome
- Thiazide diuretics
- Glucocorticoid deficiency / Addison's

(Ref: Davidson's /24th/P-676/Box-20.32)

37. Calcium metabolism is regulated by (Diploma July 2021)

- Calcitriol
- Parathyroid hormone
- Calmodulin
- Calcitonin
- Thyroid hormone

Answer: T T F T T

Explanation:

- Calmodulin-Ca²⁺ complex is associated with one of the mechanism of hormone action

(Ref: Davidson's /24th/P-677/Box-20.33 + Ganong/27th/P-390)

SBA Previous Years Questions

Residency Questions

01. A 22 years old woman presents with difficulty in turning her head from side to side after minor neck injury. On examination flexion & extension at the neck preserved but rotation at the head ins painful & restricted. which type of synovial joint is involved in this rotational movement (Residency March 2026)

- a) Elipsoild joint.
- b) Hinge Joint
- c) pivot joint
- d) plane Joint
- e) saddle Joint

Answer: C

Explanation:

* Rotational movement at head caused by Atlantoaxial joint which is pivot type of joint.

(Ref: Vishram (V-3/4th/P-44)

02. A 46-year-old man receives a general anesthetic in preparation for a cholecystectomy. A right subcostal incision is made, which begins near the xiphoid process, runs along and immediately beneath the costal margin to the anterior axillary line and transects the rectus abdominis

abdominis muscle and rectus sheath. At the level of the transpyloric plane, the anterior wall of the sheath of the rectus abdominis muscle receives contributions from (Residency March 2025)

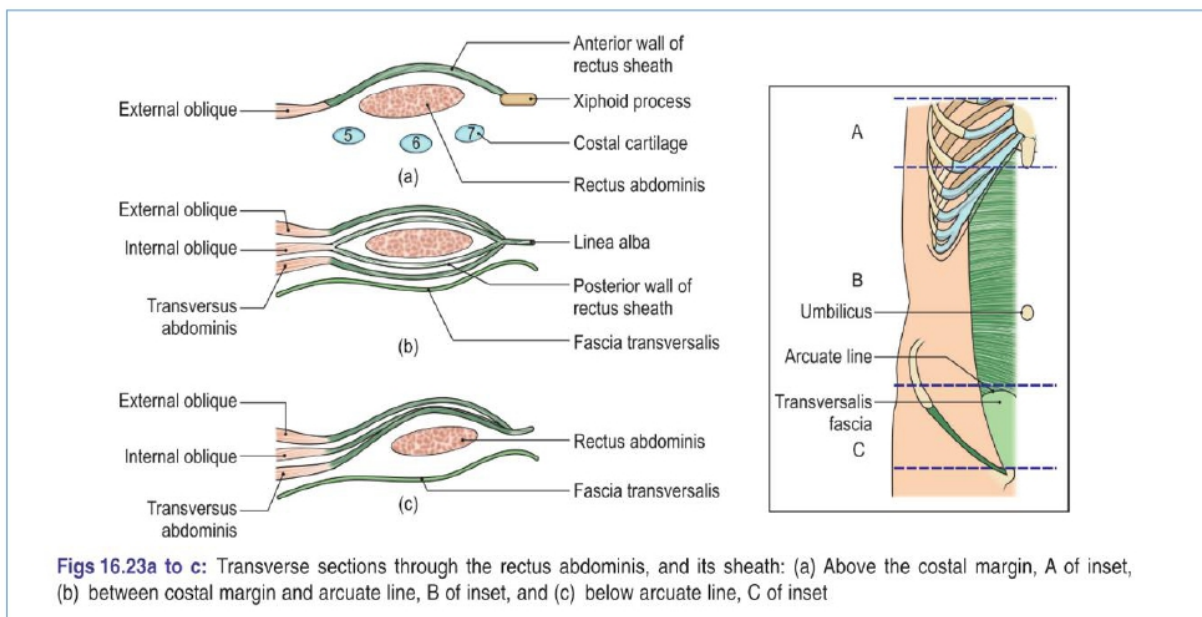
- a) Aponeuroses of the internal and external oblique muscles
- b) Aponeuroses of the transversus abdominis and internal oblique muscles
- c) Aponeuroses of the transversus abdominis, internal and external oblique muscles
- d) Transversalis fascia
- e) Transversalis fascia and aponeuroses of the transversus abdominis muscle

Answer: A

Explanations:

1. Between costal margin and arcuate line:

- (a) Anterior wall is formed by the fusion of aponeurosis of external oblique with the anterior lamina of aponeurosis of internal oblique.
- b) Posterior wall is formed by the fusion of aponeurosis of transversus abdominis with the posterior lamina of aponeurosis of internal oblique.



03. In small intestine, failure to absorb nutrients is most likely due to a significant decrease in which of the following?

- a) Microvilli
- b) Gap junctions
- c) Cilia
- d) Cell layers
- e) Basement membrane thickness

Answer: A

Explanation:

At the apical cell membrane of each enterocyte are located dense microvilli, which serve to increase greatly the absorptive surface of the cell.

Ref: Junqueira's Basic Histology/ 14th/ P- 316

04. During microscopic examination of adrenal gland histology slide you see larger lipid rich cells arranged in radial columns. Which layer is this?

- a) Zona glomerulosa
- b) Zona Fasciculata
- c) Zona Reticularis
- d) Adrenal medulla
- e) Adrenal cortex

Answer: B

Explanation:

Histology

- The adrenal cortex is arranged in a zonal configuration.
- The outer zona glomerulosa contains small, compact cells.
- The central zona fasciculata can be identified by larger, lipid-rich cells, which are arranged in radial columns.
- Compact and pigmented cells characterise the inner zona reticularis.
- The adrenal medulla consists of a thin layer of large chromaffin cells, which synthesise, store and secrete catecholamine.

Ref: Bailey-Love/ 27th/ P-839

05. All are retroperitoneal organ except–

- a) Spleen
- b) Kidney
- c) Suprarenal gland
- d) Descending colon
- e) Abdominal aorta

Answer: A

06. All of the following structures form stomach Bed except–

- a) Body of pancreas
- b) Splenic artery
- c) Right crus & dome of diaphragm
- d) Transverse mesocolon
- e) Left suprarenal gland

Answer: C

07. Portal vein is formed–

- a) Behind the Head of the pancreas
- b) Behind the Neck of the pancreas
- c) Front of the uncinat process
- d) Behind the tail of process
- e) Behind the 1st part of duodenum

Answer: B

08. All are characteristic features of large intestine except–

- a) Taenia coli
- b) Appendices epiploicae
- c) Sacculation
- d) Haustration
- e) Villi

Answer: E

09. Meckel's diverticulum is due to the persistence of–

- a) Allantois
- b) Ductus venosus
- c) Vitello intestinal duct
- d) Left embilical vein
- e) Urachus

Answer: C

10. Most common site of intestinal TB–

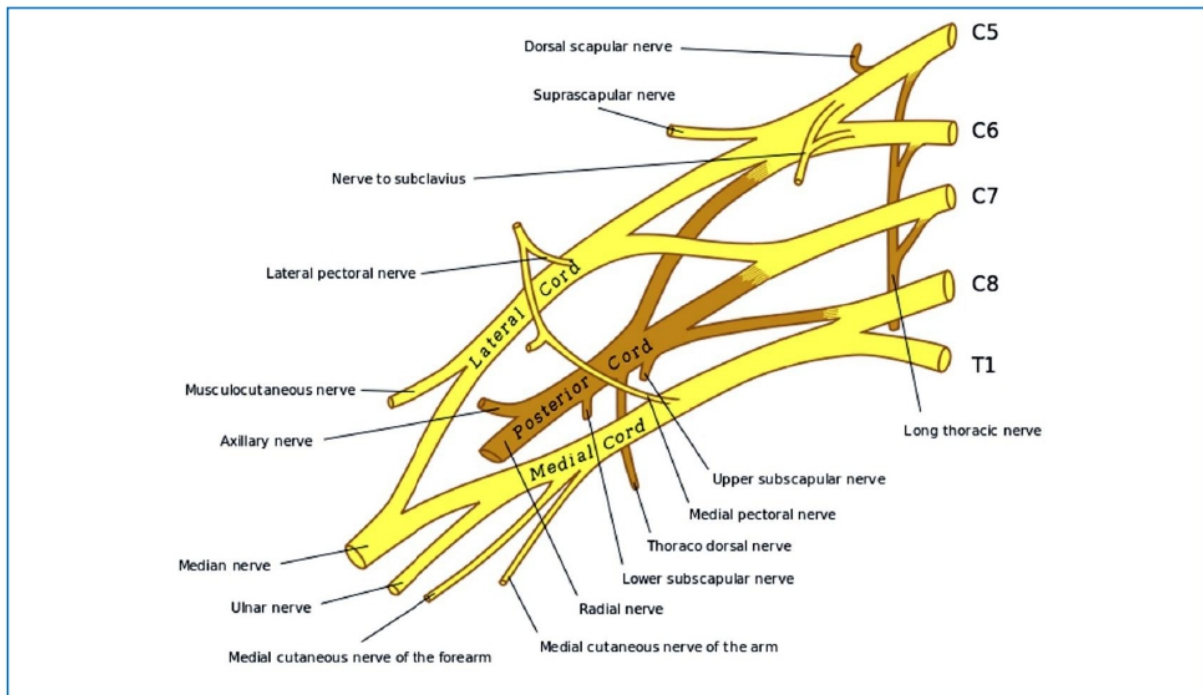
- a) Appendix
- b) Caecum
- c) Sigmoid colon
- d) Duodenum
- e) Rectum

Answer: B

11. Which part of deltoid is multipinnate?

- a) Clavicular fibres
- b) Acromial fibres
- c) Fibres from spine of scapula
- d) Whole muscle
- e) None

Answer: B



Ref: *BD Chaurasia/ V-1/ 6th / P-96*

40. A patient develops a significant clawing of the fourth- and fifth-digits secondary to nerve injury. Which muscle has been weakened and therefore results in the clawing?

- a) Extensor digitorum
- b) Lumbrical
- c) Flexor digitorum superficialis
- d) Dorsal interosseous
- e) Flexor digiti minimi

Answer: B

Explanation:

Loss of the medial two lumbrical muscles innervated by the ulnar nerve is the main reason for the clawing of digits 4 and 5.



Ref: *BD Chaurasia/ V-1/ 6th / P-127*

41. Which of the following structures does not pass through the aortic orifice of the diaphragms?

- a) Aorta
- b) Thoracic duct
- c) Hemizygous vein
- d) Azygos vein
- e) Lymphatic vessels

Answer: C

42. Anterior aspect of the neck of first rib is related to all structures except:

- a) Sympathetic chain
- b) Superior intercostal vein
- c) Superior intercostal artery
- d) Ventral ramus of first thoracic nerve
- e) 1st posterior intercostal vein

Answer: B

43. In the mid axillary line, the inferior margin of parietal pleura crosses:

- a) 6th rib
- b) 8th rib
- c) 10th rib
- d) 12th rib
- e) 9th rib

Answer: C

SBA Previous Years Questions

01. A 23-year-old man presents with dark urine and fatigue after taking antimalarial medication. Urine examination reveals hemoglobinuria.

Which enzyme deficiency is most likely responsible for this condition? (Residency March-2026)

- a) Glucose 6 phosphate dehydrogenase
- b) Hexokinase
- c) Lactase
- d) Pyruvate dehydrogenase
- e) Transketolase

Answer: A

Explanation:

patient with glucose-6-phosphate dehydrogenase deficiency + H/O ingestion or antimalarial drugs causes hemolysis (hemoglobinuria).

(Ref: Davidson / 24th / P- 957–958)

02. A 24-year-old woman presents to the emergency department with severe diarrhea. When she is supine (lying down), her blood pressure is 90/60 mm Hg (decreased) and her heart rate is 100 beats/min (increased). When she is moved to a standing position, her heart rate further increases to 120 beats/min

Which of the following accounts for the further increase in heart rate upon standing? (Residency March-2026)

- a) Decreased total peripheral resistance
- b) Decreased venous return
- c) Increased afterload
- d) Increased cardiac muscle contractility
- e) Increased vasoconstriction

Answer: B

Explanation:

When a person stands up from supine position → ↓ venous return → ↓ CO (↓ BP) → ↑ Heart rate.

03. In physiological state, plasma osmolarity is determined by the plasma concentration of (Residency March 2025)

- a) Albumin
- b) Glucose
- c) Potassium
- d) Sodium
- e) Urea

Answer: D

Explanation:

Plasma osmolarity is not routinely measured but, because sodium and its associated anions (mainly chloride) account for more than 90% of the solute in the extracellular fluid, plasma sodium concentration is a reasonable indicator of plasma osmolarity under many conditions

(Ref: Guyton Physiology/14th/P-314)

04. A peripheral blood film report shows the presence of Howell-Jolly bodies, target cells, and occasional Pappenheimer bodies. Which of the following conditions is compatible with these findings? (Residency March 2025)

- a) Iron deficiency anemia
- b) Lead poisoning
- c) Myelofibrosis
- d) Post-splenectomy status
- e) Sideroblastic anemia

Answer: D

Explanation:

Post-splenectomy status (hyposplenism) is revealed by the blood film findings of Howell–Jolly bodies or Pappenheimer bodies, target cells.

The blood film appearances of hyposplenism.

Blood film features

Red cells
Target cells
Acanthocytes
Irregularly contracted or crenated cells
Howell-Jolly bodies (DNA remnants)
Siderotic (iron) granules (Pappenheimer bodies)
White cells
+ Mild lymphocytosis, monocytosis
Platelets
+ Thrombocytosis

(Ref: Davidson 's/ 24th/P- 931, Box: 25.2, Hoffbrand Hematology/9th/P-136)

05. The acidity in the duodenum results in increased biliary and bicarbonate-rich pancreatic secretions. Which of the following is responsible for the secretion? (Residency March 2025)

- a) Release of CCK
- b) Release of gastrin
- c) Release of motilin
- d) Release of secretin
- e) Stimulation of adrenergic sympathetic neurons

Answer: D

Explanation:

Secretin increases the secretion of bicarbonate by the duct cells of the pancreas and biliary tract.

(Ref: Ganong Physiology/ 26th/P- 458)

SBA Practice Questions

General Physiology

01. A fluorescent dye that cannot cross cell membranes is used to label several contiguous cells. One cell in the middle is experimentally bleached with light that destroys the dye, but the cell soon recovers dye fluorescence. This recovery is best explained by the presence of which of the following structures between the bleached cell and its fluorescent neighbours?

- a) Basal lamina
- b) Desmosomes
- c) Gap junctions
- d) Glycosaminoglycans
- e) Tight junctions

Answer: C

Explanation:

- A gap junction is a junction between certain animal cell types that allows different molecules and ions to pass freely between cells.
- The junction connects the cytoplasm of cells. One gap junction is composed of two connexons (or hemichannels), which connect across the intercellular space.
- They are analogous to the plasmodesmata that join plant cells.
- In vertebrates, gap-junction hemichannels are primarily homo- or hetero-hexamers of connexin proteins.
- Invertebrate gap junctions comprise proteins from the hypothetical innexin family.
- However, the recently characterised pannexin family, functionally similar but genetically distinct from connexins and expressed in both vertebrates and invertebrates, probably encompasses the innexins.
- Gap junctions formed from two identical hemichannels are called homotypic, while those with differing hemichannels are heterotypic.
- In turn, hemichannels of uniform connexin composition are called homomeric, while those with differing connexins are heteromeric.

- Channel composition is thought to influence the function of gap-junction channels but it is not yet known how.

Gap junctions:

- Allow for direct electrical transmission between cells
- Allow for chemical transmission between cells, through the transmission of small second messengers, such as IP₃ and Ca²⁺
- Allow any molecule smaller than 1 kDa to pass through.

02. A person standing in the upright position begins to lean to one side. The postural muscles that are closely connected to the vertebral column on the side will stretch. Because of this, stretch receptors in those muscles contract to correct posture. Which of the following statements regarding the stretch reflex is CORRECT?

- a) It is monosynaptic
- b) It is polysynaptic
- c) It is initiated by stimulation of Golgi tendon organ
- d) It involves type II fibres
- e) It involves higher centres

Answer: A

Explanation:

- A stretch reflex is a muscle contraction in response to stretching within that muscle. It is a monosynaptic reflex that provides automatic regulation of skeletal muscle length.
- Muscle spindles are sense organs sensitive to stretch of the muscle in which they lie.
- The patellar (knee-jerk) reflex is an example. Another example is the group 1a fibres in the calf muscle, which synapse with motor neurones supplying muscle fibres in the same muscle.
- A sudden stretch, such as tapping the Achilles' tendon, causes a reflex contraction in the muscle as the spindles sense the stretch and send an action potential to the motor neurones, which then cause the muscle to contract; this particular reflex causes a contraction in the soleus—

Master Question

General Physiology

01. In Na⁺, K⁺-ATPase pump -

- a) Inhibition increased Intracellular Na⁺ concentration
- b) Inhibition increased Intracellular K⁺ concentration
- c) Inhibition increased Intracellular Ca²⁺ concentration
- d) Inhibition increased Na⁺-glucose co-transport
- e) Inhibition increased Na⁺-Ca²⁺ counter-transport
- f) Inhibition Increase cardiac contractility
- g) Na⁺ is actively transport into the cell
- h) K⁺ is Passively transport into the cell
- i) Cell volume maintain
- j) Equal number of Na⁺ - K⁺ is transported
- k) Constant pumping activity is carried out in all cells.

a	b	c	d	e	f	g	h	i	j	k
T	F	T	F	F	T	F	F	T	F	T

Respiratory Physiology

02. Rate of gas diffusion through the respiratory membrane is

- a) Inversely proportional to thickness of respiratory membrane
- b) Directly proportional to surface area of respiratory membrane
- c) Inversely proportional to solubility of the membrane
- d) Directly proportional to pressure difference of gas
- e) Inversely proportional to diffusion coefficient of gas
- f) Directly proportional to diffusion coefficient of the gas
- g) Inversely proportional to the thickness of respiratory membrane
- h) Inversely proportional to the pressure gradient

- between two sides of membrane
- i) Directly proportional to molecular weight of the gas
 - j) Directly proportional to solubility of the gas

a	b	c	d	e	f	g	h	i	j
T	T	F	T	F	T	T	F	F	T

03. During normal quiet inspiration there is

- a) An increase in pulmonary vascular resistance
- b) An increase in elastic recoil tendency of the lung
- c) More prominent physiological splitting of 2nd heart sound
- d) An increase in heart rate
- e) Greater stroke volume in left than right ventricle
- f) The anterior ends of some ribs are raised to increase the transverse chest-diameter
- g) The anterior medullary respiratory centers are principally involved
- h) The pressure inside the pleural cavity needs to be reduced
- i) Contraction of the internal intercostal muscles are vital
- j) The muscles running from the chest wall to the humerus contribute significantly
- k) Increase in intra pleural pressure
- l) Increase in intra alveolar pressure
- m) Increase in intra abdominal pressure
- n) Increase venous return to the heart
- o) Increase Heart rate

a	b	c	d	e	f	g	h	i
F	F	T	T	F	F	F	T	F

j	k	l	m	n	o
F	F	F	T	T	T

14. Blood flow is directly proportional true-

- a) Resistance of blood vessel
- b) Total cross sectional area
- c) Square of radius
- d) Viscosity of blood
- e) Metabolic activity
- f) Pumping activity of heart
- g) Pressure gradient
- h) Length of blood vessel
- i) Velocity of blood

a	b	c	d	e	f	g	h	i
F	T	F	F	T	T	T	F	T

15. Total peripheral resistance is inversely proportional to

- a) Hematocrit
- b) Radius
- c) Viscosity of blood
- d) Velocity of blood flow
- e) Cross sectional area of blood vessel
- f) Elasticity of blood vessel
- g) Sympathetic activity
- h) Length of blood vessel

a	b	c	d	e	f	g	h
F	T	F	F	T	T	F	F

GIT

16. Gastrin secretion is increased by -

- a) Acid in the lumen of stomach
- b) Distension of stomach
- c) Increased circulating level of secretin
- d) Vagotomy
- e) Elevated circulating level of epinephrine
- f) Sight and smell of food
- g) Increased circulating level of secretin

a	b	c	d	e	f	g
F	T	F	F	T	T	F

17. Serum Amylase raised in-

- a. Severe Diabetic ketoacidosis
- b. Salivary gland inflammation.
- c. liver cirrhosis.
- d. Acute pancreatitis.
- e. Renal failure.
- f. Ectopic pregnancy.
- g. Upper GIT perforation.
- h. Acute myeloid leukemia.
- i. Chronic pancreatitis.

a	b	c	d	e	f	g	h	i
T	T	F	T	T	T	T	F	F

18. HCl secretion increased in-

- a. Somatostatin.
- b. Acetylcholine
- c. GIP.
- d. Histamine.
- e. Gastrin.
- f. VIP.
- g. Gastric distension.
- h. GIP
- i. Secretin.
- j. CCK

a	b	c	d	e	f	g	h	i	j
F	T	F	T	T	F	T	F	F	F

19. Anorexogenic Hormones Are

- a. Insulin
- b. Leptin
- c. Neuropeptide YY
- d. Polypeptide YY
- e. GLP-1
- f. Ghrelin
- g. Motilin
- h. Oxyomodulin
- i. Pancreatic polypeptide

a	b	c	d	e	f	g	h	i
T	T	F	T	T	F	F	T	T

Blood Physiology

20. Prothrombin time assay

- a) Is done in hepatic failure
- b) Is related to vitamin K dependent factors
- c) Involves the intrinsic pathway of coagulation
- d) Is monitored during oral anticoagulant therapy
- e) Is monitored during heparin therapy
- f) Prolonged in hepatocellular disease
- g) Prolonged in disseminated intravascular coagulation
- h) Prolonged in hemophilia
- i) Prolonged in obstructive jaundice
- j) Prolonged in warfarin therapy
- k) Prolonged in treatment with oral anticoagulant drugs
- l) Hemophilia A
- m) Deficiency of factor XI and XII
- n) Hemolytic disease of newborn
- o) Increased in following splenectomy
- p) Increase in hemolytic jaundice
- q) In fulminant hepatic failure

a	b	c	d	e	f	g	h
T	T	F	T	F	T	T	F

i	j	k	l	m	n	o	p	q
T	T	T	F	F	F	F	F	T

21. Vitamin K is necessary for genesis of

- a) Factor X
- b) Prothrombin
- c) Factor V
- d) Factor IX
- e) Fibrinogen
- f) Factor II
- g) Factor VII
- h) Stable factor

a	b	c	d	e	f	g	h
T	T	F	T	F	T	T	T

22. Bleeding time is increased in

- a) Chronic aspirin ingestion
- b) Anemia
- c) Thrombocytopenia
- d) Vitamin C deficiency
- e) Vitamin A deficiency
- f) ITP
- g) VWD
- h) Christmas disease
- i) DIC
- j) Hemophilia

a	b	c	d	e	f	g	h	i	j
T	F	T	T	F	T	T	F	T	F

23. ECG change in hypokalemia are

- a) QRS interval >0.20 seconds
- b) ST segment depression
- c) T wave inversion
- d) Absence of prominent U wave
- e) Normal QT interval
- f) Prolonged PR interval
- g) ST elevation
- h) Prolonged QT interval
- i) Prominent U
- j) Tall and slender T wave
- k) Reduced P wave height
- l) Shortened P-R interval
- m) Prolonged QRS complex

a	b	c	d	e	f	g
F	T	T	F	F	T	F

h	i	j	k	l	m
T	T	F	F	F	F

24. Activated partial thromboplastin time is prolonged in

- a) Disorders of intrinsic pathway
- b) Factor VII deficiency
- c) Factor X deficiency
- d) Factor VIII deficiency
- e) Factor IX, X or XII deficiency
- f) Fibrinogen deficiency
- g) Factor XI deficiency
- h) Both APTT and PT prolonged in Low molecular weight heparin therapy
- i) Both APTT and PT both prolonged in Acute liver failure
- j) Both APTT and PT both prolonged in Disseminated intravascular coagulation
- k) Both APTT and PT both prolonged in Factor XIII deficiency
- l) Both APTT and PT both prolonged in Hemolytic uremic syndrome

a	b	c	d	e	f
T	F	T	T	T	T

g	h	i	j	k	l
T	F	F	T	F	F

25. Thrombocytopenia

- a) Present in henoch Schoenlein purpura
- b) Present in diamond black fan syndrome
- c) Present in hypersplenism
- d) Present in large hemangioma
- e) Present in SLE
- f) May occur as an autoimmune phenomenon
- g) Is caused by sulfonamides
- h) Is associated with increased bleeding time
- i) Is associated with increased clotting time.
- j) Thromboplastin generation test is useful in its diagnosis

a	b	c	d	e	f	g	h	i	j
F	F	T	F	T	T	T	T	F	F

26. Prolonged storage of whole blood leads to

- a) Decrease blood glucose level
- b) Increase serum potassium level
- c) Decrease non-functional plasma enzymes
- d) Increase PCO₂
- e) Increase lactate level
- f) Decrease in conc of lactic acid
- g) Decrease in conc of plasma K⁺