1. Which of the following statement(s) is/are FALSE aboutgenitor-urinary anatomy?

a) Superficial dorsal penile artery is a branch of bulbourethral artery

b) Penile skin is supplied by superficial external pudendal artery

c) Penis receives three venous drainage systems

d) There are 5 urethral sphincters in children

e) Nerve supply of penis includes pelvic splanchnic nerves

Correct Answer - A:D

Ans. is 'a' i.e., Superficial dorsal penile artery is a branch of bulbo-urethral artery & 'd' i.e., There are 5 urethral sphincters in children

Vasculature & Innervation of penis

A. Arterial supply: mainly by branches of the internal pudendal artery (branch of anterior division of the internal iliac artery).

- Dorsal Arteries of penis supplying the fibrous tissue around corpora and skin of penis.
- Deep arteries of penis (cavernous artery or artery to crura of penis): they pierce the crura and run within the corpora cavernosa, thus supplying the erectile tissue.
- Artery of bulb of penis (Bulbo-urethral artery): supply posterior part of corpus spongiosum + Cowper's glands
- Superficial eir Deep branches of external pudendal artery (branch of femoral artery): supply penile skin

B. Venus drainage: The penis is drained by three venous systems: superficial, intermediate, and deep.

- SUPERFICIAL veins: drains into the left saphenous vein. Veins from more superficial tissue may drain into the external superficial pudendal veins.
- INTERMEDIATE system contains the deep dorsal and circumflex veins, lying within and beneath Buck's fascia.

DEEP drainage system consists :

1. Crural veins
2. Cavernosal veins
3. The internal pudendal veins

C. Lymphatic drainage:

- Glans drain into the deep inguinal nodes.
- From rest of the penis lymph drains into the superficial inguinal nodes.

D. Nerve supply

a) Somatic supply:

- Skin of the penis is supplied by pudendal nerve via dorsal nerve of penis and posterior scortal nerve.
- A small area on the dorsum of proximal penis (root) :ilionguinal nerve.
- The muslces,bulbocavernosusand ischeocavernosus:perineal branch of pudendal nerve.

b) Parasympathetic :It is responsible for erection and is derived from pelvic splanchnic nerves (S2S3S4).

c) Sympathetic :It is responsible for ejaculation(initial part) and is derived from Ll segment via superior and inferior hypogastric plexus.

2. 4th Aortic arch is responsible for the formation of?

a) Arch of aorta

b) Pulmonary artery

c) Pulmonary vein

d) Subclavian artery

e) Subclavian vein

Correct Answer - A:D

Ans. is 'a' i.e., Arch of aorta & 'd' i.e., Subclavian artery

Aortic arch IV : The right and left side develop differently :

1. Left aortic arch IV forms part of arch of aorta which lies between left common carotid and left subclavian arteries.
2. Right aortic arch IV forms most proximal part of right subclavian artery (distal part is formed by right dorsal aorta and right 7th cervical intersegmental artery). The left subclavian artery is formed by left 7th cervical intersegmental artery.

About other options

1. Pulmonary artery -5th aortic arch
2. Pulmonary vein - pulmonary veins develop independently (during the formation of septum primum.
3. Subclavian vein - Subclavian veins are formed by 7^{th} cervical intersegmental vein

3. All are true regarding renal anatomy EXCEPT?

a) Left kidney is related to both 11th & 12th ribs

b) Long axis is lateral and upwards

c) Supplied by anterior segmental artery

d) Supplied by rectal plexus

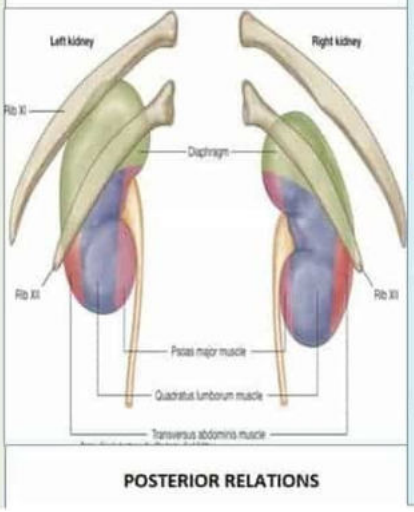
e) Both kidneys move in opposite direction during respiration

Correct Answer - B:D:E

Ans. is 'b' i.e., Long axis is lateral and upwards, 'd' i.e., Supplied by rectal plexus & 'e' i.e., Both kidneys move in opposite direction during respiration

LOCATION

Left kidney:
Diaphragm
Costodiaphragmatic recess of the pleura
11th & 12th ribs; last intercostal space
Psoas major
Quadratus lumborum
transversus abdominis.
Subcostal (T12),
iliohypogastric & ilioinguinal nerves.



POSTERIOR RELATIONS

Right kidney:
- Diaphragm
- Costodiaphragmatic recess, of the pleura
- 12th rib, last intercostal space
- Psoas major
- Quadratus lumborum, transversus abdominis.
- Subcostal (T12), iliohypogastric & ilioinguinal nerves.

Arterial Supply:

- Each kidney is supplied by **renal arteries, left and right, which branch from left & right phrenic artery** which branch directly from

the abdominal aorta.

- **Posterior, apical, upper anterior, middle anterior and lower are 5 segments of vascular supply in each kidney**
- Kidneys receive approximately 20% of the cardiac output.
- **Renal artery → Segmentalarteries → Interlobar arteries** (penetrate the renal capsule and extend through the renal columns between the renal pyramids)
- **Interlobar arteries supply → Arcuate arteries** (run through the boundary of the cortex and the medulla) → Interlobular arteries → Afferent arterioles (supply the glomeruli).
- **Branches of renal artery are end arteries.**
- **Right renal artery is longer and passes behind IVC.**

NERVE SUPPLY:

- Kidney is supplied by **renal plexus**, an offshoot of **coelic plexus.**

4. True statement regarding anatomy of nasolacrimal apparatus is/are?

a) Nasolacrimal duct opens in inferior meatus

b) There is upper & lower canaliculus

c) Most people have common canaliculus

d) Canaliculus is lined by Ciliary stratified columnar epithelium

e) Nasolacrimal duct is fractured in most head and neck injuries

Correct Answer - A:B:C:E

Ans. is 'a' i.e., Nasolacrimal duct opens in inferior meatus, 'b' i.e., There is upper & lower canaliculus, 'c' i.e., Most people have common canaliculus & `e' i.e., Nasolacrimal duct is fractured in most head and neck injuries

Nasolacrimal (drainage) apparatus consists of:

1. Lacrimal canaliculi
2. Lacrimal sac
3. Nasolacrimal duct

Lacrimal canaliculi

- There are two lacrimal canaliculi - superior and inferior on each side.
- They unite to form a common canaliculusand drain via the sinus of Maier into the lacrimal sac posterior to the medial palpebral ligament and anterior to the orbicularis oculi muscle.
- It is lined by stratified squamous epithelium supported by elastic tissue.

Lacrimal sac:

- The lacrimal sac lies in the lacrimal fossa on the inferomedial aspect of the bony orbit between the posterior and anterior lacrimal crests.

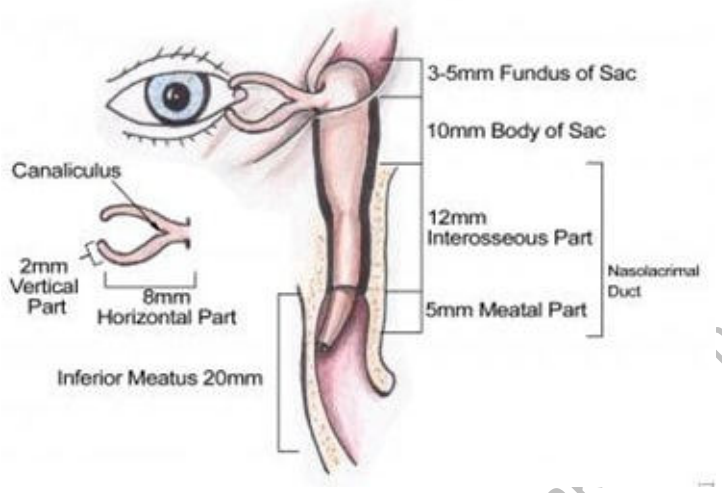
- The sac receives the lacrimal canaliculi before it drains via the valve of Krause into the nasolacrimal duct.

Nasolacrimal duct

- The nasolacrimal duct is the inferior continuation of the lacrimal sac

2 parts:

1. intraosseous part (12 mm): lies within the nasolacrimal canal of the maxilla
2. membranous part (3-5 mm): runs in the nasal mucosa; terminates below the inferior nasal meatus as a slit-like opening where it is covered by a mucosal fold called the valve of Hasner



5. Posterior interosseous nerve supplies?

a) Extensor carpi radialis longus

b) Extensor carpi radialis brevis

c) Extensor carpi ulnaris

d) Brachioradialis

e) Extensor pollicis longus

Correct Answer - B:C:E

Ans. is 'b' i.e., Extensor carpi radialis brevis, 'c' i.e., Extensor carpi ulnaris & `e' i.e., Extensor pollicis longus

- The posterior interosseous nerve is a pure motor nerve and innervates supinator & extensor carpi radialis.

It supplies:?

1. Extensor carpi ulnaris
2. Extensor digitorum
3. Extensor digitiminimi
4. Abductor pollicis longus
5. Extensor pollicis longus and brevis
6. Extensor indicis

6. Cavernous sinus receives blood from?

a) Superior ophthalmic vein

b) Superior petrosal sinus

c) Inferior petrosal sinus

d) Spheno-parietal sinus

e) Basilar plexus ofveins

Correct Answer - A:D

Ans. is 'a' i.e., Superior ophthalmic vein & 'd' i.e., Spheno-parietal sinus

Tributaries (incoming channels) of cavernous sinus

1. Superior ophthalmic vein
2. A branch of inferior ophthalmic vein or sometimes vein itself.
3. Central vein of retina (it may also drain into superior ophthalmic vein).
4. Superficial middle cerebral vein.
5. Inferior cerebral vein.
6. Sphenoparietal sinus
7. Frontal trunk of middle meningeal vein (it may also drain into pterygoid plexus or into sphenoparietal sinus).

7. Inner Waldayer's ring includes?

a) Jugulo-diagastricnodes

b) Jugulo-omohoid nodes

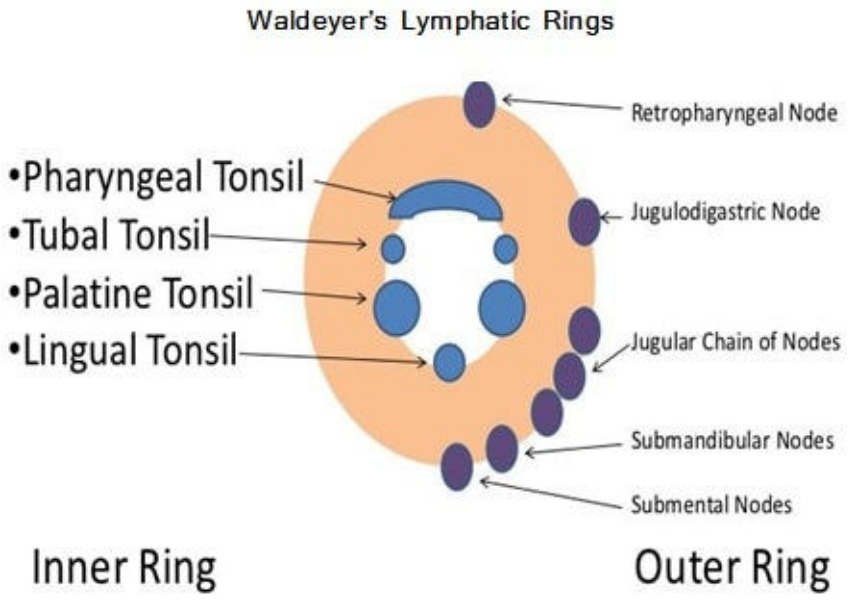
c) Palatine tonsil

d) Tubal tonsil

e) Pharyngeal tonsil

Correct Answer - C:D:E

Ans. is 'c' i.e., Palatine tonsil, 'd' i.e., Tubal tonsil & `e' i.e., Pharyngeal tonsil



8. Structure(s) passing through aortic opening into the chest include?

a) Thoracic duct

b) Azygousvein

c) Hemiazygous vein

d) Esophagus

e) Inferior vena cava

Correct Answer - A:B

Ans. is 'a' i.e.,Thoracic duct & 'b' i.e. Azygous vein

- The **aortic hiatus** is a hole in the diaphragm. It is the lowest and most posterior of the large apertures.
- It is located approximately at the level of the twelfth thoracic vertebra (T12).
- Through it passes the aorta, the azygos vein, the thoracic duct, and hemi-azygos vein passes through the left crus.

9. Constituents of Rotator cuffincludes all EXCEPT?

a) Teres major

b) Teres minor

c) Supraspinatus

d) Infraspinatus

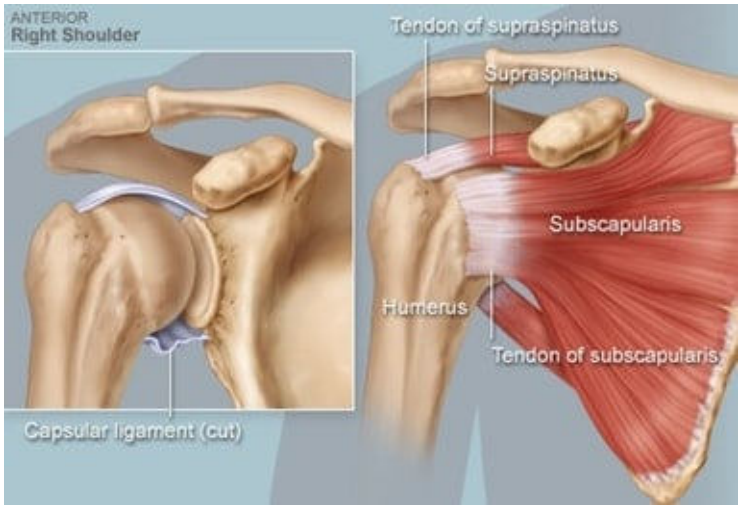
e) Subscapularis

Correct Answer - A

Ans.is 'a' i.e., Teres major

Each one of these muscles is part of the rotator cuff and plays an important role:

- **Supraspinatus.** This holds your humerus in place and keeps your upper arm stable. And helps lift your arm.
- **Infraspinatus.** This is the main muscle that lets you rotate and extend your shoulder.
- **Teres Minor.** This is the smallest rotator cuff muscle. Its main job is to assist with rotation of the arm away from the body.
- **Subscapularis.** This holds your upper arm bone to your shoulder blade and helps you rotate your arm, hold it straight out and lower it.



10. Not TRUE statement regarding parotid gland is/are?

a) Deep lobe contains deep lymphatics

b) Divided into superficial and deep lobes by facial nerve

c) Parotid duct opens opposite to the second upper molar

d) Ectodermal in origin

e) Auriculotemporal nerve is the main sensory nerve

Correct Answer - A

Ans. is 'a' i.e., Deep lobe contains deep lymphatics

Development:

- Parotid gland is the first salivary gland to appear, in early 6' week.
- It is ectodermal in origin and develops from the buccal epithelium just lateral to the angle of mouth

Structures emerging from parotid

The following structures emerge from the parotid gland:

Anterior border:

- Parotid duct

3 Terminal branches of facial nerve:

- The zygomatic and buccal branches: toward the temporal region, eyelids and cheek, respectively.
- Mandibular branch : Run along the body of the mandibletowards the mouth

Apex:

- 5th terminal branch of facial nerve: Cervical branch continues into the neck (to platysma).
- Anterior & posterior divisions of retromandibular vein

Posterior border:

- Posterior auricular nerve
- Posterior auricular artery
- Posterior auricular vein

Along base:

- superficial temporal artery
- temporal branch of facial nerve
- Auriculotemporal nerve

STRUCTURES WITHIN GLAND:

Arteries:

- External carotid artery enters through posteromedial surface
- Maxillary artery
- Superficial temporal vessel
- Posterior auricular artery

Veins:

- The retromandibular veins

Facial Nerve

Parotid Duct (Stenson's duct)

- The duct turns opens into the vestibule of the mouth (gingivo- buccal vestibule) opposite the crown of the upper 2nd molar tooth

Nerve supply:

- **PARASYMPATHETIC:auriculo temporal nerve**
- **SYMPTHETIC SUPPLY-** plexus around the external carotid artery.
- **SENSORY NERVES: auriculotemporal nerve**, except for parotid fascia & overlying skin which are innervated by **Great auricular nerve (C2, C3).**

11. External anal sphincter is innervated by?

a) S2,S3,S4

b) S2, S3

c) S1,S2

d) L5,Sl

e) L2,L3

Correct Answer - A

Ans. is'a' i.e.,S2, S3, S4

Anal Sphincters :

Two sphincters, internal and external, surround the anal canal:

A. Internal sphincter (sphincter ani internus):

- Involuntary
- Sympathetic fibers through superior hypogastric plexus a
- Parasympathetic fibers from pelvic splanchnic nerves (S2 S3 S4).

B. External sphincter (sphincter ani externus)

- Voluntary
- Surrounds the entire length of anal canal
- Inferior rectal nerve (S2 S3 S4) and perineal branch

12. A patient had a lesion in the wrist. On examination the thumb was laterally rotated & adducted, with ape thumb deformity. Which is the nerve involved?

a) Median

b) Ulnar

c) Radial

d) Post interosseous nerve

e) None

Correct Answer - A

Ans. is 'a' i.e., Median

Ape thumb (Simian thumb) deformity : -

- The Ape Hand Deformity is caused by damage to the distal median nerve(also called a Median Claw lesion), and subsequent loss of opponenspollicis muscle function.
- The thumb is adducted and laterally rotated so that the thumb lies in the same plane as the other fingers. It is due to over action of adductor pollicis (supplied by ulnar nerve).

13. Spring ligament refers to?

a) Plantar calcaneonavicular ligament

b) Short planter ligament

c) Long planter ligament

d) Both'b' &'c'

e) None

Correct Answer - A

Ans. is 'a' i.e., Plantar calcaneonavicular ligament

The spring ligament (Plantar calcaneonavicular ligament) is a group of ligaments which connect calcaneum to navicular.

It consists of :?

1. Superomedial ligament.
2. Medioplantar oblique ligament (medial or intermedialcalcaneonavicular ligament).
3. Inferoplantar longitudinal ligament (Lateral calcaneonavicular ligament).

14. Which of the following is NOT a content of medial wall of middle ear?

a) Oval window

b) Round window

c) Processuscochlearformis

d) Aditus & antrum

e) Notch of Rivinus

Correct Answer - D:E

Ans. is 'd' i.e., Aditus & antrum & 'e' i.e., Notch of Rivinus

Medial or inner labyrinthic wall of middle ear (Parieslabyrinthica):

- It is formed by the lateral wall of labyrinth.

It presents following structures:

1. Promontory: It is a bony bulge which is due to the basal coil of cochlea. Tympanic plexus present over it.
2. Oval window (fenestra vestibuli/ovalis):
3. The footplate of stapes
4. Round window(fenestra cochleae/rotunda): covered by the secondary tympanic membrane.
5. Horizontal tympanic part of fallopian canal for facial nerve
6. The tympanic segment of facial nerve canal
7. Lateral semicircular canal
8. Processuscochleariformis

- The tendon of tensor tympani takes a turn on this process and then is inserted on the neck of malleus.
- Processuscochleariformis is an important surgical landmark for the

level of the genu of the facial nerve.

15. Pronator quadrates has same innervations as following muscles?

a) Flexor pollicis longus

b) Flexor digitorum superficialis

c) Palmaris longus

d) Flexor digitorumprofundus of middle finger

e) Flexor carpi ulnaris

Correct Answer - A:B:C:D

Ans. is'a' i.e., Flexor pollicis longus, 'b' i.e., Flexor digitorum superficialis, 'c' i.e., Palmaris longus, 'd' i.e., Flexor digitorumprofundus of middle finger

All the flexor muscles of the forearm are supplied by median nerve, except the flexoraulnaris and the medial half of flexor digitorumprofundus to the ulnar two fingers (4^{th}& 5^{th} finger).

MEDIAN NERVE INNERVATONS:

- The median nerve innervates the majority of the muscles in the **anterior forearm**, and some **intrinsic hand** muscles.

Anterior Forearm

Innervates muscles in the superficial and intermediate layers:

- **Superficial layer:** Pronator teres, flexor carpi radialis and palmaris longus.
- **Intermediate layer**: Flexor digitorum superficialis.

The median nerve also gives rise to the anterior interosseous nerve, which supplies the deep flexors:

- Deep layer: Flexor pollicis longus, pronator quadratus, and the lateral half of the flexor digitorumprofundus (the medial half of the

muscle is innervated by the ulnar nerve).

Hand

The median nerve innervates some of the muscles in the hand via **two branches**.

- The **recurrent branch** :Thenar muscles
- The **palmar digital branch** : Innervates the lateral two lumbricals.

16. Supination & pronation doesn't take place at?

a) Superior radioulnar joint

b) Middle radioulnar joint

c) Inferior radioulnar joint

d) Radiocarpal joint

e) Midcarpal joint

Correct Answer - D:E

Ans. is 'd' i.e., Radiocarpal joint &`e' i.e., Midcarpal joint

Forearm rotation (supination pronation) occurs at radio-ulnar joint complex i.e. Superior (proximal) radioulnar joint, Inferior (distal) radioulnar joint & Middle radioulnar joint .

Movement: Muscles responsible for movements

Supination

- Supinator (when elbow is extended)
- Biceps brachii (when elbow is flexed)
- Brachioradialis (supinates the pronated forearm to midprone position)

Pronation

- Pronaterteres (rapid pronator)
- Pronator quadrates (strong pronator)
- Brachioradialis (pronates the supinated forearm to midprone position)

17.

Occlusion occurs at 2nd part of axillary artery, blood flow is maintained by which of the following anastomosis?

a) Suprascapular artery & post circumflex humeral artery

b) Anterior and posterior circumflex humeral artery

c) Circumflex scapular and posterior circumflex humeral artery

d) Deep branch of the transverse cervical artery and subscapular artery

e) Anterior circumflex artery and subscapular artery

Correct Answer - A:D

Ans. is 'a' i.e., Suprascapular artery & post circumflex humeral artery & 'd' i.e., Deep branch of the transverse cervical artery and subscapular artery

- Anastomosis around scapula provides blood supply to distal part if first or second part of axillary artery is blocked.
- Anastomosis around scapula connects the first part of subclavian artery with third part of axillary artery.
- Anastomosis Around Scapula

Connects 1st part of subclavian with 3rd part of axillary artery.

Around body of scapula

1. Suprascapular (branch of 1st part of subclavian).
2. Deep branch of transverse cervical (branch of thyrocervical trunk from Ist part of subclavian).
3. Circumflex scapular (branch of subscapular, branch of 3rd part of axillary).

On the acromion process

1. Acromial branch of thoracoacromial (branch of 2nd part of axillary).
2. Ascending branch of posterior circumflex humeral (branch of 3rd part of axillary).
3. Acromial branch of suprascapular (branch of 1st part of subclavian).

18. True regarding red pulp of spleen is/are?

a) Periarteriolar lymphoid sheaths

b) B-cell containing lymphoid follicles

c) Perisinusoidal macrophages

d) Composed of sinusoids and splenic cords

e) Removal of old RBCs and modification of new cells

Correct Answer - C:D:E

Ans. is 'c' i.e., Perisinusoidal macrophages, 'd' i.e., Composed of sinusoids and splenic cords & `e' i.e., Removal of old RBCs and modification of new cells

STRUCTURE OF SPLENIC PARENCHYMA

- The spleen comprises many units of red pulp & white pulp, which are centred around central arterioles (smaller branches of splenic artery).

Red pulp

- Red pulp contains large number of venous sinusoids draining into tributaries of splenic vein.
- Venous sinusoids are lined by endothelial stave cells which form incomplete layer & present intracellular slits b/w them through which blood can percolate.
- Surrounding the sinuses is the parenchyma, which contains lymphocytes, macrophages, plasma cells, etc.
- It metabolizes senescent red blood cells (erythrocytes).
- Adjacent blood spaces contain blood cells and arranged in cords called splenic cords of billroth(splenic cords of reticulin fibers).

19. Posterior interosseous nerve supplies all except:

a) Extensor carpi radialis longus

b) Extensor carpi ulnaris

c) Extensor digitorum

d) Extensor indices

e) Flexor carpi ulnaris

Correct Answer - A:E

Ans. (a) Extensor carpi radialis longus, (e) Flexor carpi ulnaris

- The posterior interosseous nerve is a pure motor nerve and innervates supinator & extensor carpi radialis.

It supplies:?

1. Extensor carpi ulnaris
2. Extensor digitorum
3. Extensor digitiminimi
4. Abductor pollicis longus
5. Extensor pollicis longus and brevis
6. Extensor indicis

20. Muscle's of anterior compartment of leg is/ are:

a) Peroneus tertius

b) Peroneus brevis

c) Peroneuslongus

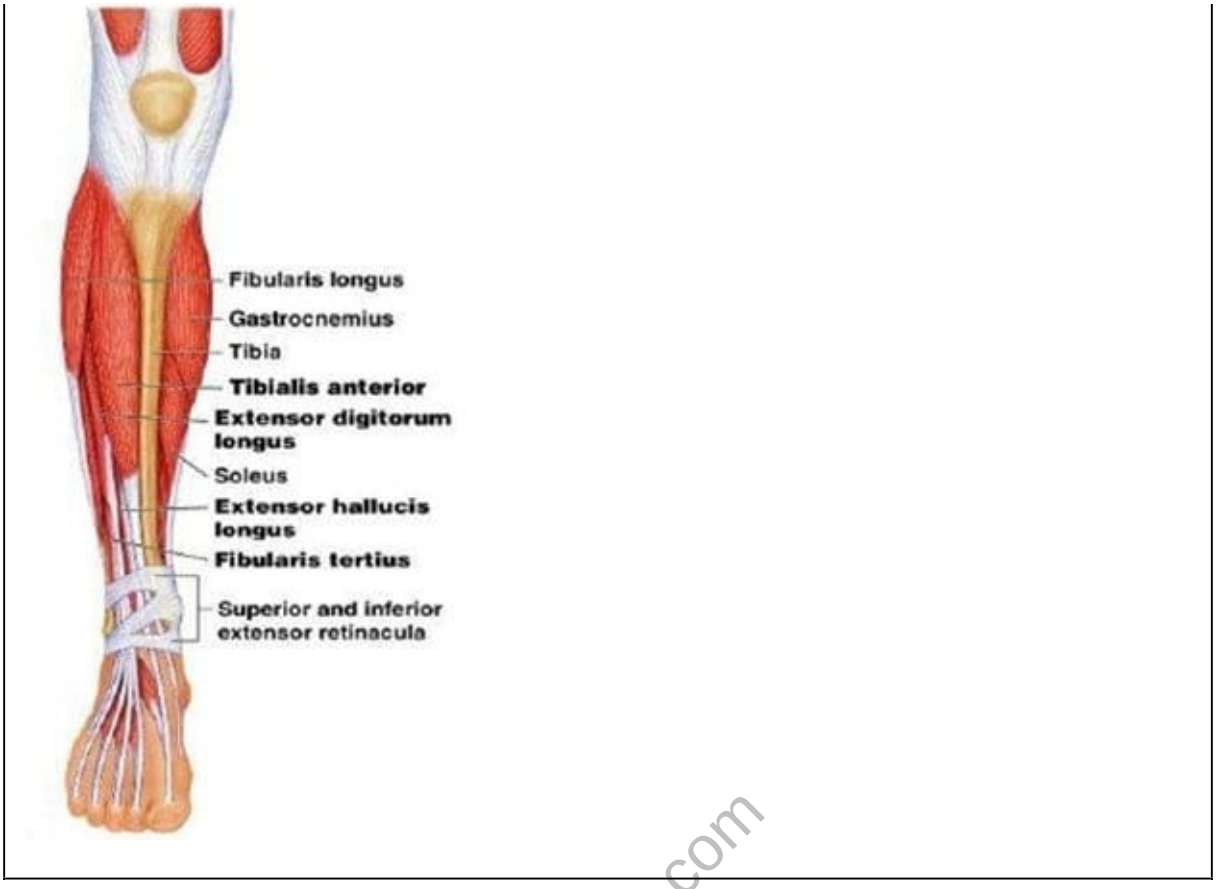
d) Flexordigitorumlongus

e) Flexor hallucis longus

Correct Answer - A

Ans. (a) Peroneus tertius

- The 4 muscles in the anterior compartment of the leg are- the tibialis anterior, extensor digitorum longus, extensor hallucis longus, and fibularis(Peroneus) tertius



21. Branches of internal carotid artery directly arising from it:

a) Posterior communicating artery

b) Superiorhypophysealartery

c) Inferior hypophyseal artery

d) PosteriorcerebralArtery

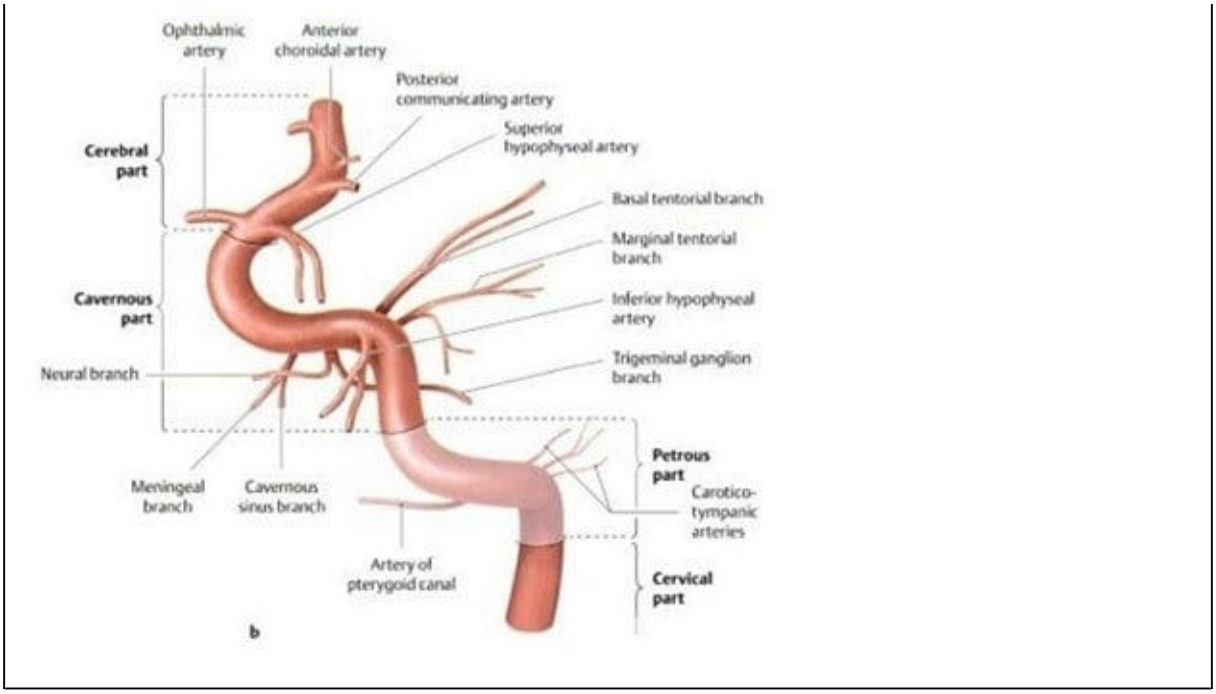
e) Recurrent artery ofHeubner

Correct Answer - A:B:C

Ans.(a) Posterior communicating artery, (b), Superior hypophyseal artery, (c) Inferior hypophyseal artery

Internal Carotid Artery Branches :

- Ophthalmic artery
- Posterior communicating artery
- Anterior choroidal artery
- Anterior cerebral artery: Orbital; Frontal and Parietal branches
- Middle cerebral artery: Deep or perforating branch; temporal branch; Frontal branch and Parietal branches



22.

Cross-section of medulla at the level of mid-olivary section through the floor of fourth ventricle contains which of the following structure?

a) Trapezoid body

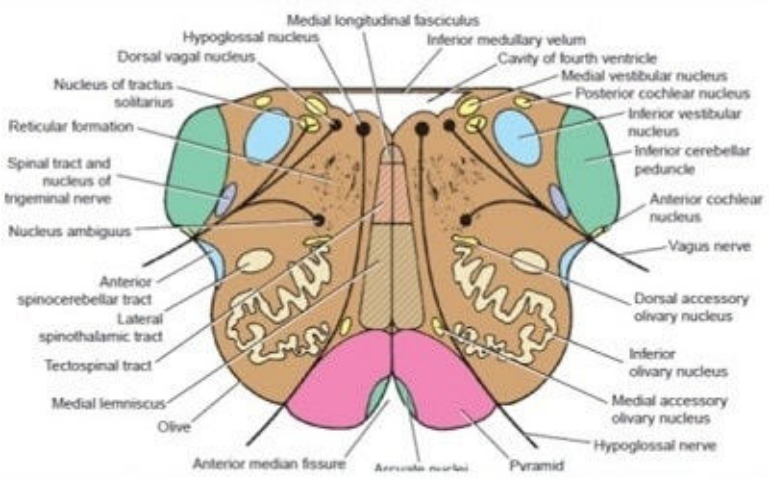
b) Dorsal nucleus of vagus

c) Nucleus of tractus solitarius

d) Nucleus ambigus

e) Superior vestibular nucleus

Correct Answer - B:C:D
Ans. (b) Dorsal nucleus of vagus, (c) Nucleus of tractus solitarius, (d) Nucleus ambiguus



23. Correct statement about meiosis:

a) Somatic cells not divide by meiosis because number of chromosomes reduces to half

b) Occur in germ cell which result in haploid cells

c) One spermatocyte produces one sperm and one oocyte produces one ovum

d) Germ cell undergoes division to form diploid cell and increase their number

e) Body needs meiosis to produce large no. of eggs and sperms

Correct Answer - A:B:E

Ans. (a) Somatic cells not divide by meiosis (b) Occur in germ cell which result (e) Body needs meiosis to produce .

Meiosis:

- Meiosis is a type of cell division that reduces the number of chromosomes ln the parent cell by half and produces four gamete cells.
- This process is required to produce egg and, sperm cell for sexual reproduction
- Meiosis begins with a parent cell that ls diploid and forms four daughter cells that are haploid, which have half the number of chromosomes of the diploid cells.

24. All are true about vestibular nerve except:

a) It has two division- superior and inferior vestibular

b) Vestibular nuclei situated at junction of pons and medulla

c) Nerve fibres relay at scarpa's ganglion

d) Nucleus lies in midbrain near aqueduct

e) None

Correct Answer - D

Ans. (d) Nucleus lies in midbrain near aqueduct

Vestibular nerve:

- The main nerve divides at and within the vestibular(Scarpa's) ganglion into superior and inferior division, which are connected by an isthmus
- Vestibular nuclei is located in floor of 4^{th} ventricle & is supplied by PICA.
- Vestibular ganglion is also k/a Scarpa's ganglion.
- Vestibular nerve anastomose with cochlear and facial nerve.

25. Which flexor tendon zone in hand is known as No man’s land?

a) Zone I

b) Zone II

c) Zone III

d) Zone IV

e) Zone V

Correct Answer - B

Ans. (b) Zone II

- Zone II extends from the middle of the middle phalanx to distal palmar crease. It contains both flexor tendon superficialis and flexor tendon profundus.
- It has been called No Man's Land.' or "No Man's Zone because repair in this zone is very difficult.

26. Content(s) of aortic hiatus?

a) Thoracic duct

b) Aorta

c) Vagus nerve

d) Inferior vena cava

e) Azygos vein

Correct Answer - A:B:E

Ans. (a) Thoracic duct, (b) Aorta, (e) Azygos vein

- The aortic hiatus situated at the level of T12 vertebra.

Structures passing through aortic hiatus along with aorta are:

- Thoracic duct
- Azygos vein
- Hemiazygos vein

27. True about trochlear nerve:

a) Arise from ventral aspect of brainstem

b) Enters orbit through annulus of Zinn

c) Lesion causes diplopia

d) Nucleus of the trochlear nerve is located in the caudal mesencephalon beneath the cerebral aqueduct

e) Damage causes ipsilateral palsy of superior oblique muscle

Correct Answer - C:D

Ans. (c) Lesion causes diplopia, (d) Nucleus of the trochlear nerve is located in the caudal mesencephalon

The trochlear nerve has certain unique features:

- It is the only cranial nerve whose fibers originate totally from the contralateral nucleus.
- It is the only cranial nerve to emerge from the dorsal surface of the brain stem.
- It is the most slender of all the cranial nerves.
- It has the longest intradural course among the three extraocular motor nerves.
- It supplies only one muscle i.e. superior oblique (Abducent cranial nerve also supplies only one muscle i.e. Lateral rectus).

28. True about inferior oblique muscle:

a) Supplied by inferior division of 3rd CN

b) Primary eye action-Extorsion, abduction & depression

c) The muscle pass below inferior rectus

d) Origin from lacrimal bone

e) Nerve enters the muscle from ocular surface

Correct Answer - A:C

Ans. (A) Supplied by inferior division of 3rd CN (C) The muscle pass below inferior rectus

- It originates from orbital plate of maxilla lateral to the orifice of nasolacrimal duct.
- It is the only muscle to take origin from front of the orbit. Other recti muscle take origin from annulus of zinn.
- Occulomotor nerve in orbit: The larger, lower division divides into 3 branches for the medial rectus, the inferior rectus 6 the inferior oblique. All branches enter the muscle on their ocular surfaces except that for the IO which enters its posterior border'

29. True about Submandibular gland duct obstruction by stone:

a) Presents as a mass below body of mandible

b) Stone in Wharton duct can be palpated below mucous membrane of floor of mouth

c) Starts pain just after starting a meal

d) Pain carried by glossopharyngeal nerve

e) All the above

Correct Answer - E

Ans. e. All the above

- The submandibular salivary gland is a common site of calculus formation.
- The presence of a tense swelling below the body of the mandible, which is greatest before or during a meal and is reduced in size or absent between meals, is diagnostic of the condition.
- Examination of the floor of the mouth will reveal absence of ejection of saliva from the orifice of the duct of the affected gland.
- Frequently, the stone can be palpated in the duct, which lies below the mucous membrane of the floor of the mouth'
- All the 3 pairs of salivary glands are supplied by efferent (Parasympathetic & sympathetic) & afferent nerves (chorda tympani-br. of VII nerve & IX nerw). Afferent fibers carry pain impulse from salivary gland

30. True about palatine tonsil:

a) Crypts is lined by squamous epithelium

b) Supplied by IX CN

c) Tongue depressor is used for examination

d) Arterial supply is by tonsillar ascending branch of grater palatine artery

e) Present in oropharynx

Correct Answer - A:B:C:E

Ans. (A) Crypts is lined by squamous epithelium; (B) Supplied by IX CN; (C) Tongue depressor is used for examination; (E) Present in oropharynx

Palatine tonsil

- The Palatine tonsils are two prominent masses situated one on either side between the glossopalatine and pharyngopalatine arches.
- Each tonsil consists fundamentally of an aggregation of lymphoid tissue underlying the mucous membrane between the palatine arches.
- In the child the tonsils are relatively (and frequently absolutely) larger than in the adult
- The follicles of the tonsil are lined by a continuation of the mucous membrane of the pharynx, covered with stratified squamous epithelium

Arteries supplying the tonsil are the:

- Dorsalis linguae from the lingual
- The ascending palatine and tonsillar from the external maxillary
- The ascending pharyngeal from the external carotid

- The descending palatine branch of the internal maxillary
- A twig from the small meningeal.
- The veins end in the tonsillar plexus, on the lateral side of the tonsil
- The nerves are derived from the sphenopalatine ganglion, and from the glossopharyngeal.

31. True about articular cartilage:

a) In zone l chondrocytes are smaller

b) Zone 2 contains articular cartilage progenitor cells

c) Zone 3 contains calcified cartilage

d) Zone 4 contain calcified cartilage

e) Chondrocytes are active cell

Correct Answer - A:C:E

Ans.(A) In zone l chondrocytes are smaller; (C) Zone 3 contains calcified cartilage; (E) Chondrocytes are active cell

There are four zones (layers) of articular cartilage from the articular surface to subchondral bone.

1. Superficial zone (Zone-1)

- It is the thinnest zone.
- It consists of two layers : (i) A sheet of densly packed collagen with little polysaccharide and to cells, covers the joint surface, and (ii) flattened el ipsoid-shaped chondrocytes, with their major axis parallel to joint surface.

2. Transition zone (Zone2)

- Composition is intermediate between superficial zone and middle zone.

3.Middle zone or radial zone or deep zone (Zone-3)

- The chondrocytes are spheroidal in shape with their major axis perpendicular to joint surface.
- Chondrocytes are most active synthetically in this zone.
- This zone contains the largest diameter collagen fibrils, the highest concentration ofproteoglycans and the lowest concentration of water.

4. Calcified cartilage zone (Zone-4)

- It separates the middle zone from subchondral bone.
- The cells are small with small amount of endoplasmic reticulum and golgi apparatus with very little metabolic

32. All are true about CSF except:

a) Total volume is 250 ml

b) Pressure is 60-180 mm of H2O

c) Formed from choroid plexus of 3rd ventricle

d) Formed from choroid plexus of lateral ventricle

e) None of the above

Correct Answer - A

Ans.a. Total volume is 250 ml

- The major source of CSF is the choroidal plexus of all 4 ventricles, mainly in two lateral ventricles.
- Other sources of CSF are ependymal cells of the ventricles and the brain itself, via perivascular spaces.
- The total volume of CSF in an adult is about 125-150 ml.
- The rate of formation of CSF is about 500-550 ml/day. Thus the CSF is replaced 3-4 times every day.
- CSF pH is 7.33
- 112 mm H_20 is the average normal CSF pressure

33. True about Atlanto-axial joint:

a) Vertebral artery pass through grove on arch of atlas vertebrae to foramen magnum

b) Permits flexion & extension

c) Permit side to side movement of head

d) Permits flexion only

e) Permits rotation

Correct Answer - A:C:E

Ans. a. Vertebral artery pass through grove on arch of atlas vertebrae to foramen magnum;c. Permit side to side movement of head ; e. Permits rotation

- There are 3 atlantoaxial articulations- two lateral atlantoaxial joints b/w the lateral masses of Cl & C2 vertebrae & one median atlantoaxial joint b/w the dens of C2 & the anterior arch transverse ligament of the atlas
- Movement(mainly rotation) at all three atlantoaxial joints permits the head to be turned from side to side, as occurs when rotating the head to indicate disapproval(the 'NO' movement)
- The most important factors maintaining stability are the ligaments, of which the transverse atlantal ligament is the strongest.
- The alar ligaments are weaker

34. True about innervation of parotid gland:

a) Postganglionic parasympathetic fibre secretomotor

b) Preganglionic parasympathetic fibre relay in Otic ganglion

c) Preganglionic parasympathetic nerve begin in inferior petrosal nucleus

d) Sympathetic nerve are vasomotor

e) Postganglionic parasympathetic fibres pass through the glossopharyngeal nerve

Correct Answer - A:B:D

Ans: a. Postganglionic parasympathetic fibre secretomotor. b. Preganglionic parasympathetic fibre relay in Otic ganglion. d. Sympathetic nerve are vasomotor.

Development:

- Parotid gland is the first salivary gland to appear, in early 6' week.
- It is ectodermal in origin and develops from the buccal epithelium just lateral to the angle of mouth

Structures emerging from parotid

The following structures emerge from the parotid gland:

Anterior border:

- Parotid duct

3 Terminal branches of facial nerve:

- The zygomatic and buccal branches: toward the temporal region, eyelids and cheek, respectively.
- Mandibular branch : Run along the body of the mandibletowards the mouth

Apex:

- 5th terminal branch of facial nerve: Cervical branch continues into

the neck (to platysma).
- Anterior & posterior divisions of retromandibular vein

Posterior border:
- Posterior auricular nerve
- Posterior auricular artery
- Posterior auricular vein

Along base:
- superficial temporal artery
- temporal branch of facial nerve
- Auriculotemporal nerve

STRUCTURES WITHIN GLAND:

Arteries:
- External carotid artery enters through posteromedial surface
- Maxillary artery
- Superficial temporal vessel
- Posterior auricular artery

Veins:
- The retromandibular veins

Facial Nerve

Parotid Duct (Stenson's duct)
- The duct turns opens into the vestibule of the mouth (gingivo- buccal vestibule) opposite the crown of the upper 2nd molar tooth

Nerve supply:
- **PARASYMPATHETIC:auriculo temporal nerve**
- **SYMPTHETIC SUPPLY-** plexus around the external carotid artery.
- **SENSORY NERVES: auriculotemporal nerve**, except for parotid fascia & overlying skin which are innervated by **Great auricular nerve (C2, C3).**

35. Muscle(s), which form the floor of pelvic floor:

a) Obturator internus

b) Piriformis

c) Puborectalis

d) Pubococcygeus

e) Ischiococcygeus

Correct Answer - C:D:E

Ans. c. Puborectalis; d. Pubococcygeus; e. Ischiococcygeus

- The pelvic floor is formed by the large levator ani (with parts including the pubococcygeus, puborectalis, and iliococcygeus) and the much smaller coccygeus.

36. Which of the following muscle is supplied by median nerve :

a) Oppenenspollocis

b) Adductor pollicis

c) Lateral half of the Flexor digitorumprofundus

d) Superficial head of flexor pollicis brevis

e) Deep part of flexorpollicis brevis

Correct Answer - A:C:D

Ans. a. Oppenenspollocis; c. Lateral half of the Flexor digitorumprofundus; d. Superficial head of flexor pollicis brevis

- There are four short muscles of thumb (pollex), they are abductor pollicis brevis, opponenspollicis, flexor pollicis brevis and adductor pollicis. The first three of these muscles form the thenar eminence.
- All these muscles are supplied by median nerve except for adductor pollicis which is innervated by ulnar nerve.

37. Which of the following statement(s) is/are true about sphincters of body:

a) Lower 5 cm of oesophageal act as oesophageal sphincter & it is not morphologically different from other portion of oesophagus

b) Oesophageal & pyloric sphincter remains in topically contracted state

c) Pre-capillary sphincter is present in b/w metarteriole & capillary

d) Pudendal nerve supplies the sphincter urethrae

e) Sphincter of oddi lies at junction of duodenum & CBD

Correct Answer - B:C:D:E

Ans. b. Oesophageal & pyloric sphincter remains in topically contracted state; c. Pre-capillary sphincter is present in b/w metarteriole & capillary; d. Pudendal nerve supplies the sphincter urethrae ; e. Sphincter of oddi lies at junction of duodenum & CBD

- The common bile duct enters the duodenum at duodenum papilla. Its orifice is surrounded by the sphincter of Oddi 6 it usually unites with the main pancreatic duct just before entering the duodenum
- At the lower end of the esophagus, extending upward about 3 cm above its junction with stomach, it is broad lower esophageal sphincter.
- Lower oesophageal sphincter, a specialize zone of circular smooth muscle surrounding the oesophagus at its transit through the diaphragm and for much of its short abdominal floor
- At the point where each true capillary originates from a metarteriole, a smooth muscle fiber usually encircles the capillary. This is called,

the precapillary sphincter. This sphincter can open & close the entrance to the capillary

- Pyloric sphincter remain slightly tonically contracted almost all the time. Despite normal tonic contraction of the pyloric sphincter, the pylorus usually is open enough for water & other fluids to empty from the stomach into the duodenum with ease.

38. True about abduction at shoulder joint:

a) Supraspinatus initiates abduction

b) Serratus anterior & trapezius also help in abduction

c) Multipennate deltoid clavicular fiber is main abductor

d) Axillary nerve injury has no effect on abduction

e) Musculotendinous cuff stabilizes shoulder joint

Correct Answer - A:B:E

Ans. (a) Supraspinatus initiates abduction (b) Serratus anterior & trapezius also help in abduction (e) Musculotendinous cuff stabilizes shoulder joint.

MOVEMENTS OF SHOULDER JOINT

- **Movement in every direction (Flexion, extension, abduction, adduction, rotation, circumduction)**
- Spinal Cord regulating Shoulder movements (C5, C6, C7 & C8)
- Flexion, Abduction, & lateral rotation (C5, C6,).
- Extension, Adduction, & Medial rotation is (C6, C7, C8)
- **Movements that take place during abduction of shoulder are axial rotation of humerus at acroclavicular joint ,elevation of humerus& movement at clavicular end of sternoclavicular joint.**

TYPE OF MOVEMENT	PLANE OF MOTION	AXIS OF MOTION	MUSCLES INVOLVED	HUMERAL HEAD GLIDING	RANGE OF MOTION	FA LI
					Total-0-165º or 175º Full internal	-In gl l T

Abduction	Frontal plane	Saggital axis	Deltoid, Supraspinatus	Inferiorly in glenoid cavity	rotation of humerus0-60º Full external rotation of humerus0-90º	I th j ca th hu

39. Organ which have no lymphatic supply:

a) Eyeball

b) Brain

c) Liver

d) Kidney

e) Spinal cord

Correct Answer - A:B:E

Ans. a. Eyeball; b. Brain & e. Spinal cord

- Lymph capillaries are absent from the cellular structures like brain, spinal cord, splenic pulp, bone morrow, articulate cartilage, epidermis, hair, nail & cornea.
- Lymphatic vessel are found in all tissue & organ of body except the central nervous system, eyeball, internal ear, epidermis of the skin, cartilage & bone.

40. True regarding thyroid gland is –

a) Deep investing layer form Berry ligament

b) Condensed fibrous part of gland form true capsule

c) Superior thyroid artery lies posterolateral to superior laryngeal nerve

d) Recurrent laryngeal nerve has variable course on both sides

e) Supplied by Thyrocervical Trunk

Correct Answer - B:E

Ans. Ans. is 'b' i.e., Condensed fibrous part of gland form true capsule; 'e' i.e., Supplied by Thyrocervical Trunk

Thyroid gland has two capsule :-

1. True capsule - peripheral condensation of the connective tissue of the gland.
2. False capsule - derived from the pretracheal layer of the deep cervical fascia. It also forms the suspensory ligament of Berry which connects the lobe to the cricoid cartilage.
3. Ligament of berry and false capsule are derived from pretracheal layer of deep cervical fascia (not investing layer).

- Superior thyroid artery is related to external laryngeal nerve (external branch of superior laryngeal nerve), but not directly related to superior laryngeal nerve itself
- Recurrent laryngeal nerve has variable relation to inferior thyroid artery only on right side, on left side it has consistent relation

Blood supply of thyroid gland is through :

- Superior thyroid artery - Branch of external carotid artery
- Inferior thyroid artery - Branch of Thyrocervical trunk
- Thyroidea ima artery - From the brachiocephalic trunk or arch of

aorta

41. Correct statement[s] regarding the anatomy of vertebrae are –

a) C7 has no foramen transversarium

b) C6 has prominent lateral mass

c) T3 has smallest spinous process

d) T12 has large costal facet

e) T7 has vertically oriented articular process

Correct Answer - E

Ans. e) T7 has vertically oriented articular process

- C7 has foramen transversarium, but it does not transmits vertebral artery (unlike foramina transversaria of C1 to C6)
- Lateral mass is seen in C1 (not in C6)
- Thoracic vertebrae (including T3) have long spinous process.
- Small spinous processes are seen in cervical vertebrae (except for C7).
- T11 & T12 do not have costal facets
- T2-79 are typical thoracic vertebrae and 71, TI0, 711, 712 are atpical thoracic vertebrae
- In typical thoracic vertebrae Articular processes are vertically placed and interlocked; So dislocation can only occur if they are fractured.

42. Upper eyelid has following layer[s]-

a) Orbicularis oculi

b) Adipose tissue

c) Loose connective tissue

d) Levator palpebrae superioris

e) Muller muscles

Correct Answer - A:C:D:E

Ans. is'a'i.e., Orbicularis oculi;'c'i.e., Loose connective tissue;'d'i.e., Levator palpebrae superiors;'e'i.e., Muller muscles

Layers of eyelid :

Each lid is made up of (from without inwards)

- Skin
- Subcutaneous areolar tissue: Layer of loose areolar connective tissue, without any fat.
- Layer of striated muscles: Orbicularis oculi muscle ; In upper eyelid levator palpebrae superioris
- Submuscular areolar tissue :Nerves and vessels of the lids lie in this layer
- Fibrous layer: It is the framework of the lids and consists of :

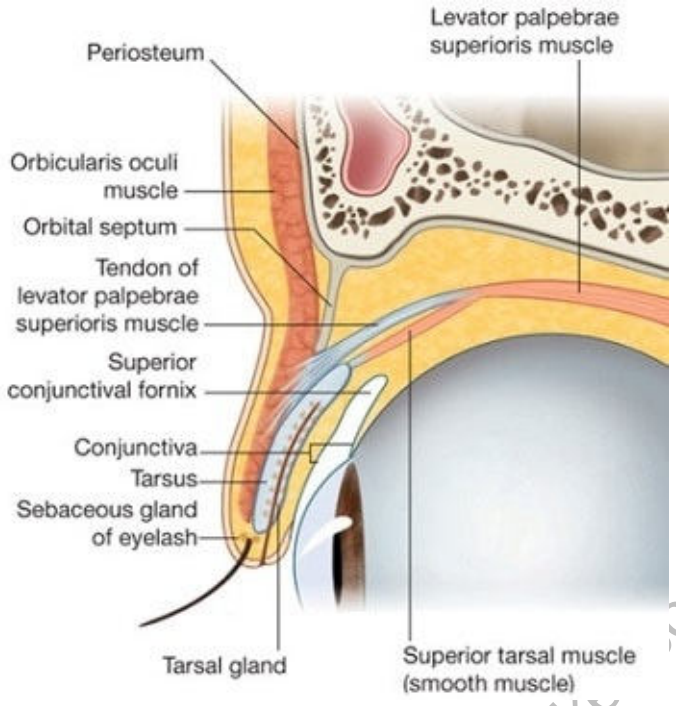
.. Tarsal plates: Tarsi form the skeleton of eyelids. Septum orbitale and Muller's muscle are attached to superior border of Upper tarsus. Orbital septum, capsulopalpebaral fascia and inferior palpebral muscle are attached to inferior border of lower tarsus. Tarial glands (meibomian glands) are embedded in the posterior surface of tarsi.

2. Septum orbitale (palpebral fascia): It is a thin, floating membrane

which takes part in all movements of eyelids'

3. Medial and lateral palpebral ligaments.

- Layers of non-striated muscle fibres: This layer consists of smooth muscle fibers of muller muscles.
- Conjunctiva



43. Branch [es] of ophthalmic artery is /are-

a) Central artery of retina

b) Supratrochlear artery

c) Anterior ethmoidal artery

d) Posterior ethmoidal artery

e) Posterior articular artery

Correct Answer - A:B:C:D

Ans.. is.a, i.e., Central artery of retina,'b'i.e., Supratrochlear artery ,'c' i.e., Anterior ethmoidal artery 'd'i.e., Posterior ethmoidal

Ophthalmic artery

It gives following branches :-

- Central artery of retina (end artery)

Lacrimal artery :- It gives following branches –

- Lateral Palpebral branch.
- Zygomaticotemporal
- Zygomaticofacial
- Recurrent meningeal
- Meningeal
- Ciliary
- Anterior ethmoidal-Supplies anterior ethmoidal sinus
- Posterior ethmoidal
- Medial Palpebral
- Supratrochlear
- Supraorbital
- Dorsal nasal

44. Blood supply of optic tract comes through

a) Middle cerebral artery

b) Anterior cerebral artery

c) Posterior cerebral artery

d) Anterior choroidal artery

e) Internal carotid artery

Correct Answer - A:D:E

Ans .a, i.e., Middle cerebral artery 'd'i.e., Anterior choroidal artery; 'e' i.e, Internal carotid artery

Optic tract is supplied by :

- Anterior choroidal artery (branch of internal carotid artery)
- Posterior communicating artery (branch of ICA);
- Middle cerebral artery (Branch of ICA)

45. True about development of cochlea

a) Fully developed at 22 weeks

b) Derived from surface ectoderm

c) Develops in bony labyrinth

d) Develops from otic vesicle

e) Develops from otic capsule

Correct Answer - A:C:E

Ans. a. Fully developed at 22 weeks; 'c'i.e., Develops in bony labyrinth; 'e' 1.e., Develops from otic capsule

- Development of internal ear starts by the age of 3 weeks of intrauterine life development of membranous internal ear is completed by 16th week and reaches its adult size & shape by 20-22 weeks when the cochlea is developed sufficiently.
- Development of phylogenetically older part of labyrinth, i.e pars superior (semi-circular canal and utricle) takes place earlier than pars inferior (saccule and cochlea).

DEVELOPMENT DERIVATIVES OF EAR:

Surface ectoderm:

- Membranous labyrinth
- Epithelial lining of external auditory meatus
- Outer surface of tympanic membrane

Mesoderm:

- Bony labyrinth
- Ear ossicle
- Skeletal muscle
- Centre of tympanic membrane

Endoderm:

- Eustachian tube lining
- Middle ear cavity
- Epithelial covering of ossicle
- Inner layer of tympanic membrane
- Tympanic membrane is derived from all three layers of germ line.

46. Urogenital diaphragm is made up of –

a) Deep transverse perinei

b) Perineal membrane

c) Sphincter Urethrae

d) Fascia of urogenital diaphragm

e) All the above

Correct Answer - E
Ans. e. All the above
Urogenital diaphragm :
Consists of two muscles :

- Sphincter urethrae
- Deep transverse perinei, also called transversus pernei profundus

Two fasciae:

- Inferior fascia of urogenital diaphragm, also called perineal membrane
- Superior fascia of urogenital diaphragm

47. True about epiglottis –

a) Contains serous gland

b) Contains mucous secreting glands

c) It is oval shaped

d) Made up of elastic cartilage

e) Has bilateral lymphatic supply

Correct Answer - B:D:E

Ans. b) Contains mucous secreting glands; d) Made up of elastic cartilage ; e) Has bilateral lymphatic supply

Epiglottis:

- The epiglottis of elastic cartilage tissue covered with a mucous membrane, attached to the entrance of the larynx.
- The epiglottis has two surfaces, lingual and a laryngeal surface, related to the oral cavity and the larynx respectively
- The entire lingual surface and the apical portion of the laryngeal surface are covered by a stratified squamous non-keratinized epithelium.
- The rest of the laryngeal surface on, which is in relation to the respiratory system' has respiratory epithelium: pseudostratified, ciliated columnar cells and mucus secreting Goblet cells.
- Epiglottis has bilateral lymphatic drainage topper deep cervical lymph nodes

48. True about meiosis I:

a) Sister chromatids replicate

b) Sister chromatids separate

c) Haploid daughter cells

d) Homologous chromosomes exchange material

e) Homologouschromosomesseparate

Correct Answer - C:D:E

Ans. is 'c' i.e., Haploid daughter cells; 'd' i.e., Homologous chromosomes exchange material! &'e' i.e. “Homologous chromosomes separate

Meiosis I is divided into following phases :-

1. Prophase I:

- Longest phase.

It is further subdivided into : _

1. Leptotene: Diffuse chromatin starts condensing into chromosomes and chromosomes start appearing in this stage.
2. Zygotene: In this stage Homologous chromosomes pair up. This process is called 'synapsis' or conjugation and each pair is called bivalent.
3. Pachytene: In this stage two chromatids of each pair separate and is called tetrad. Then there occurs 'crossing-over',i.e., one or both chromatids of one homologous chromosome crosses over with those from other homologous chromosome of that pair forming synaptonemal complex. The point of crossing over are called, chiasmata.
4. Diplotene: The two chromosomes of bivalent try to move apart. There is exchange of genetic material between Homologous

chromosomes

5. Diakinesis: In this stage the reorganized chromosomes move apart. Each bivalent can now be seen to contain four chromatids linked by a common centromere, while non-sister chromatids are linked by chiasmata.

2. Metaphase I : The bivalents become arranged around the equator of the spindle, attached to their centromeres.

3. Anaphase I : Spindle fibres pull homologous chromosomes. This separates the chromosome into two haploid sets' one set at each end ofspindle.

4.Telophase I : Two daughter cells are formed each containing 23 chromosomes (Haploid), each consisting of two chromatids (2C).

49. True about Fibrous skeleton ofheart –

a) Fibrous ring around mitral valve

b) Tendon of infundibulum is between pulmonary & aortic valve

c) Trigonumdextrum is between mitral & tricuspid valve

d) Trigonumsinistrum is between mitral and aortic valve

e) Tendon of Todaro is between central fibrous parts to Eustachian valve

Correct Answer - A:B:D:E

Ans. is 'a' i.e., Fibrous ring around mitral valye; 'b' i,e., Tendon of infundibulum is between pulmonary & aortic valve; 'd'i.e., Trigonumsinistrum is between mitral and aortic valve; &'e' i.e., Tendon of Todaro is between central fibrous parts to Eustachian valve

Fibrous skeleton ofheart:

- Fibrous ring surrounding the orifices of atrioventricular (mitral and tricuspid) orifices, pulmonary orifice and aortic orifice, along with some adjoining masses of fibrous tissue.
- Tendon of infundibulum is fibrous tissue between pulmonary and aortic ring.
- Trigonumfibrosumdextrum is fibrosus tissue between atrioventricular rigs (mitral and tricuspid) and aorta.
- Trigonumfibrosumsinistrum is fibrous tissue between the aortic and mitral rings.

50. Taste sensation from the tongue is/are carriedby –

a) Facial nerve

b) Glossopharyngealnerve

c) Hypoglossal nerve

d) Vagusnerve

e) Trigeminal nerve

Correct Answer - A:B:D

Ans, is 'a' i,e. Faeial nerve 'b' i,e. Glossopharyngeal nerve; & 'd' i,e. Vagus nerve

Taste sensation of tongue:

- Anterior 2/ 3rd part :Chorda tympani
- Posterior 1/3rd part & circumvallate papillae : Glossopharyngeal nerve
- Posterior most part: Internal laryngeal branch of Vagus nerve

51. True about epiglottis –

a) Contains serous gland

b) Contains mucous secreting glands

c) It is oval shaped

d) Made up of elastic cartilage

e) Has bilateral lymphatic supply

Correct Answer - B:D:E

Ans. is'b'i.e., Contains mucous secreting glands;'d'i.e Made up of elastic cartilage &'e'i.e', Has bilateral lymphatic supply

Epiglottis:

- The epiglottis of elastic cartilage tissue covered with a mucous membrane, attached to the entrance of the larynx.
- The epiglottis has two surfaces, lingual and a laryngeal surface, related to the oral cavity and the larynx respectively
- The entire lingual surface and the apical portion of the laryngeal surface are covered by a stratified squamous non-keratinized epithelium.
- The rest of the laryngeal surface on, which is in relation to the respiratory system' has respiratory epithelium: pseudostratified, ciliated columnar cells and mucus secreting Goblet cells.
- Epiglottis has bilateral lymphatic drainage topper deep cervical lymph nodes

52. Which of the following statement(s) is/are true about phrenic nerve except -

a) It is primary motor supply to diaphragm

b) Accessory phrenic nerve joins the phrenic nerve near the first rib

c) Formed in front of scalenus medius muscle

d) It descends posterior to sternocleidomastoid

e) Gives sensory supply to central tendon of diaphragm

Correct Answer - C

Ans is. 'C i.e., Formed in front of scalenus medius muscle

- Lies anterior to anterior scalenus muscle
- Phrenic nerve is a mixed nerve & carries motor fibres to the diaphragm & sensory fibres from the diaphragm, pleura, pericardium & part of the peritoneum.

Origin:

- It arise in the neck from the ant. rami of the 3rd, 4th & 5th cervical nerves
- It is formed at the lateral border of the scalenus anterior, opposite the middle of the sternocleidomastoid at the level of the upper border of the thyroid cartilage.

Relations:

- It runs vertically downwards on the ant. surface of the scalenus ant. & in this part it is related anteriorly to

1. Prevertebral fascia
2. Inf. belly of omohyoid
3. Transverse cervical artery

4. Suprascapular artery
5. Internal jugular vein
6. Sternocleidomastoid mus.
7. Thoracic duct on left side.

- After leaving the ant. surface of the scalenus ant. the nerve runs downwards on the cervical pleura behind the commencement of the brachiocephalic vein. (on left side nerve leaves the scalenus ant. at a higher level & crosses in front of the first part of the subclavian art.). Here it crosses the internal thoracic artery (either anteriorly or posteriorly) & enters the thorax behind the 1st costal cartilage.

53. All are supplied by anterior interosseous nerve except –

a) Flexor carpi ulnaris

b) Brachioradialis

c) Abductor pollicis brevis

d) Flexor pollicis longus

e) Flexor digitorum superficialis

Correct Answer - A:B:C:E

Ans. is'a'i'e., Flexor carpi ulnaris 'b' i.e.,Brachioradialis;'c' i.e., Abductor pollicis brevis; &'e' i.e., Flexor digitorum superficial

- The anterior interosseous nerve (**volar** interosseous nerve) is a branch of the **median nerve** that supplies the deep muscles on the anterior of the forearm, except the ulnar (**medial**) half of the flexor digitorumprofundus.

54. True statement about shoulder joint –

a) Multipennate acromial fibres of deltoid are powerful abductor

b) Axillary nerve injury has no effect on abduction

c) Musculotendinous cuff stabilizes shoulder joint

d) Supraspinatusinitiatesabduction

e) Trapezius and serratus anterior act synergistically in abduction

Correct Answer - A:C:D:E

Ans. is'a'i.e., Multipennate acromial fibres of deltoid are powerful abductor; 'c'i.e., Musculotendinous cuff stabilizes shoulder joint; 'd' i.e., Supraspinatus initiates abduction; &'e' i.e., Trapezius and serratus anterior act synergistically in abduction

TYPE OF MOVEMENT	PLANE OF MOTION	AXIS OF MOTION	MUSCLES INVOLVED
Flexion	Saggital plane	Transverse axis	Pectoralis Major,Ant. fiber of deltoid, Coraco-brachialis, Biceps
Extension	Saggital plane	Transverse axis	Latissimus dorsi,Teresmajor,Post. fibers of deltoid, Triceps
Abduction	Frontal plane	Saggital axis	Deltoid, Supraspinatus
Adduction	Frontal plane	Saggital axis	Subscapularis,Pectoralis Major, Latissimus dorsi, Teres major

			Subscapularis,Pectoralis Major,
Internal Rotation	Transverse plane	vertical axis	Latissimus dorsi, Teres major
External Rotation	Transverse plane	vertical axis	Infraspinatus, Teres minor

55. Which is attached most anteriorly on the intercondylar areaof tibia intercondylararea of tibia (area b/w medial and lateral tibial plateau)-

a) Anterior cruciate ligament

b) Posterior cruciate ligament

c) Anterior horn of the lateral meniscus

d) Anterior horn of the medial meniscus

e) Ligamentum patellae

Correct Answer - D

Ans. is'd' i.e, Anterior horn of the medial meniscus

PROXIMAL END (upper end)

- Proximal (upper) end of tibia includes **medial & lateral condyles,** forming **tibial plateau.**
- It also includes **tibial Tuberosity** & **intercondylar area.**

Attachments on proximal end are:

- **Medial condyle:Semimembranous** (posteriorly), capsule of knee joint, **tibial (medial) collateral ligament (deep part)**, medial patellar retinaculum (anteriorly).
- **Lateral condyle:** illiotibial tract (anteriorly), capsule of superior tibiofibular joint.
- **Tibial Tuberosity:Ligamentum patellae**
- **Intercondylar area (from anterior to posterior);**

1. **Anterior horn of medial meniscus**
2. Anterior cruciate ligament (ACL)
3. Anterior horn of lateral meniscus

4. Posterior horn of lateral meniscus
5. Posterior horn of medial meniscys
6. Posterior cruciate ligament (PCL)

56. True statement about development ofpancreas:

a) Uncinate process from ventral bud

b) Lower part of head from dorsal bud

c) Duct of Wirsung develops from dorsal bud only

d) Pancreatic divisum is due to abnormal development of ducts ofpancreas

e) Body is formed from dorsal bud

Correct Answer - A:D:E

Ans. a. Uncinate process from ventral bud; d. Pancreatic divisum is due to abnormal development of ducts ofpancreas; e. Body is formed from dorsal bud

- The pancreas develops from two endodermal buds, dorsal & ventral, which arise from the part of the gut that later forms the second part ofthe duodenum
- The ventral bud forms the lower part of the head & the uncinate Process of the pancreas, while the upper part of head, the body & the tail areformedfrom the dorsal bud .
- The main pancreatic duct (duct of Wirsung) is formed, in its distal part by the duct of the dorsal bud and in ifs proximal part, by the duct of the ventral bud

57. Which of the following combination is/are true regarding epithelial lining of urinary system:

a) Urinarybladder- transitional epithelium

b) Pre-prostatic urethra- stratified columnar

c) Membranous urethra- transitional epithelium

d) Distal part of penile urethra- non-keratinising stratified squamous epithelium

e) Urethral meatus- keratinising stratified squamous epithelium

Correct Answer - A:D:E

Ans. a. Urinarybladder- transitional epithelium; d. Distal part of penile urethra- non-keratinising stratified squamous epithelium e. Urethral meatus- keratinising stratified squamous epithelium

Urinary bladder is lined by uroepithelium (transitional epithelium)

The lining of urethra varies from urothelium of the bladder to keratinized stratified squamous epithelium of the glans.

- Pre-prostatic urethra: Transitionalepithelium
- Prostatic urethra: Transitionalepithelium
- Membranous urethra: Pseudostratified columnar epithelium
- Spongy urethra (or penile urethra): Pseudostratified columnar - proximally, Stratified squamous - distally

58. Which of the following statement is/are true regarding lesion of IX CN :

a) Gag reflex-absent

b) Deviation of tongue to one side

c) Loss of taste sensation in the posterior l/3 of the tongue

d) Loss of taste sensation in the anterior 2/3 of the tongue

e) May cause bulbar palsy

Correct Answer - A:C:E

Ans.a. Gag reflex-absent; c. Loss of taste sensation in the posterior l/3 of the tongue; e. May cause bulbar palsy

Glossopharyngeal Nerve Palsy:

- Loss of sensation over the mucous membrane of pharynx .
- Loss of taste sensation in the posterior l/3 of the tongue
- Gag reflex-Lost in lesion of IX & X CN

59. Feature(s) of oculomotor nerve palsy is/are:

a) Ptosis

b) Miosis

c) Mydriasis

d) Diplopia

e) Loss of accommodation

Correct Answer - A:B:D:E

Ans. a. Ptosis; b. Miosis ;d. Diplopia; e. Loss of accommodation

Oculomotor Nerve Palsy:

- Complete & total paralysis - ptosis, lateral squint, dilation of pupil, loss of accommodation, slight proptosis & diplopia .
- Pupillary light reflex in affected eye is absent .
- Pupil dilates & becomes fixed to light .
- Weber syndrome: a midbrain lesion causing contralateral hemiplegia & ipsilateral paralysis of the third nerve

60. Cervix is/are drained by:

a) External iliac lymph node

b) Internal iliac lymph node

c) Aortic lymph node

d) Inguinal lymph node

e) Sacral lymph node

Correct Answer - A:B:E

Ans. a. External iliac lymph node; b. Internal iliac lymph node; e. Sacral lymph node

Cervix: On each side, the lymphatics drain into

- External iliac, obturator lymph nodes either directly or through paracervical lymph nodes,
- Internal iliac groups
- Sacral group

61. Which of the following may occur in common peroneal nerve injury:

a) Dorsiflexion not possible

b) Foot drop

c) High stepping gait

d) Loss of inversion of foot

e) Eversion of foot affected

Correct Answer - A:B:C:E

Ans. a. Dorsiflexion not possible b. Foot drop c. High stepping gait e. Eversion of foot affected

Common peroneal nerve injury (usually d/t *fracture of head/neck fibula)* results in :

- Foot & toe drop
- Loss of dorsiflexion of ankle
- Extension of finger
- Eversion of foot
- Loss of sensation in 1st web space, anterolateral lower leg & dorsum of foot and toes.

In common peroneal nerve injury sensation of sole, lateral border & medial border & inversion & plantar flexion remain normal.

62. O'Donoghue's triad comprises of:

a) Anterior cruciate ligament tear

b) Posterior cruciate ligament tear

c) Medial meniscus

d) Lateral meniscus

e) Medial collateral ligament

Correct Answer - A:C:E

Ans. a. Anterior cruciate ligament tear ;c. Medial meniscus; e. Medial collateral ligament

- An unhappy triad (or terrible triad, "horrible triangle O'Donoghue's triad or a "blown knee-') is an injury to the anterior cruciate ligament, medial collateral ligament, and the medial meniscus

63.

Which of the following vein(s) is/are part of portal circulation:

a) Splenic vein

b) Paraumbilical vein

c) Superior rectal vein

d) Left gastric vein

e) Inferior rectal vein

Correct Answer - A:B:C:D

Ans. a. Splenic vein b. Paraumbilical vein c. Superior rectal vein d. Left gastric vein

- Portal vein collects blood from the foregut, midgut, and hindgut.
- The portal vein is located deep to the hepatic artery and cystic duct and is formed by the union of the superior mesenteric vein and splenic vein, deep to the neck of the pancreas.
- Blood from portal vein transported to the hepatic sinusoids of the liver for filtration and detoxification.
- The hepatic sinusoids empty into the common central vein, which empties into the hepatic veins and ultimately drains into the inferior vena cava.

64. Thrombosis of anterior cerebral artery cause:

a) Left foot paralysis in right anterior cerebral artery thrombosis

b) Urinary incontinence

c) Paralysis of the contralateral face, arm, and leg

d) Homonymous hemianopia

e) Gegenhalten rigidity

Correct Answer - A:B:E

Ans. a. Left foot paralysis in right anterior cerebral artery thrombosis ; b. Urinary incontinence; e. Gegenhalten rigidity

Signs and symptoms of anterior cerebral artery thrombosis:

- Paralysis of opposite foot and leg: Motor leg area
- A lesser degree of paresis of opposite arm area of cortex or fibers descending to corona radiate
- Cortical sensory loss over toes, foot and leg: Sensory areaforfoot andleg
- Urinary incontinence: Sensorimotor area in Paracentral lobule
- Contralateral grasp reflex, sucking reflex gegenhalten (paratonic rigidity)
- Abulia (akinetic mutism), slowness, delay intermittent interruption, lack of spontaneity, whispering reflex distraction to sights and sounds
- Impairment of gait and stance (gait apraxia)
- Dyspraxia of left limbs, tactile aphasia in left limbs

65. Fibrocartilage is/are found in:

a) Temporomandibular joint

b) Sternoclavicular joint

c) Hip joint

d) Vertebral disc

e) Inferior radioulnar joint

Correct Answer - A:B:D:E

Ans. a. Temporomandibular joint; b. Sternoclavicular joint ; d. Vertebral disc; e. Inferior radioulnar joint

Fibrocartilage is a white opaque structure due to dense collage fibres (type I and II).

- When a fibrous tissue is subjected to pressure it is replaced by fibrocartilage.
- It is seen in joints, symphysis, intervertebral discs, menisci and labra (shoulder joint and hip joint).
- Pinna is a type of elastic cartilage.
- Elastic cartilages are seen at sites concerned with production or reception of sounds e.g. external acoustic meatus (lateral part), auditory tube and epiglottis.

66. Which of the following is true regarding vertebral column curvature:

a) Primary curves are concave forward

b) Lumbar curve is primary

c) Thoracic curve develop when infant start walking

d) Cervical appear when the infant starts supporting its head

e) Lumbar curve appears when the child assumes the upright posture

Correct Answer - A:D:E

Ans. a. Primary curves are concave forward; d. Cervical appear when the infant starts supporting its head; e. Lumbar curve appears when the child assumes the upright posture

- The thoracic and sacral kyphotic curves are termed primary curves, because they are present in the fetus.
- The cervical and lumbar curves are compensatory or **secondary**, and are developed after birth.

KYPHOTIC CURVE:

- The thoracic curve, concave forward, begins at the middle of the second and ends at the middle of the twelfth thoracic vertebra. Its most prominent point behind corresponds to the spinous process of the seventh thoracic vertebra. This curve is known as a kyphotic curve.
- The sacral curve begins at the sacrovertebral articulation, and ends at the point of the coccyx; its concavity is directed downward and forward as a kyphotic curve.

LORDOTIC CURVES:

- The lumbar curve is more marked in the female than in the male; it begins at the middle of the last thoracic vertebra, and ends at the sacrovertebral angle. It is convex anteriorly, the convexity of the lower three vertebrae being much greater than that of the upper two. This curve is described as a lordotic curve.
- The upper cervical spine has a curve, convex forward, that begins at the axis (second cervical vertebra) at the apex of the odontoid process or dens, and ends at the middle of the second thoracic vertebra; it is the least marked of all the curves. This inward curve is known as a lordotic curve.

67. Muscle having double nerve supply:

a) Digastric muscle

b) Omohyoid muscle

c) Trapezius

d) Thyrohyoid muscle

e) Adductor magnus

Correct Answer - A:E

Ans. a. Digastric muscle; e. Adductor magnus

Innervation of Digastric:

- Anterior belly of digastric is supplied by nerve to mylohyoid (a branch of mandibular nerve) & posterior belly is supplied by facial nerve.

Innervation of adductor magnus

- Posterior division of obturator nerve innervates most of the adductor magnus
- Vertical or hamstring portion innervated by tibial nerve (L2, L3, L4)

68. Facial development takes place b/w:

a) 4-8 week

b) 8-l0week

c) 12-14week

d) 18-20week

e) 6-10week

Correct Answer - A
Ans. a. 4-8 week
Development of face

- Facial development occurs mainly between 4th and 8th weeks, and is induced by migration of cells of neural crest.
- Five facial primordia appear as prominences of mesenchyme : a frontonasal process, a pair of maxillary processes and a pair of mandibular processes.

69. Which of the following statement(s) is true regarding axillary artery:

a) Start from upper border of clavicle

b) Ulnar nerve lies medially to distal l/3 of artery

c) Radial nerve lies posteriorly distal 1/3 of artery

d) Axillary vein lies laterally to proximal 1/3 of the artery

e) End at lower border of pectoralis minor

Correct Answer - B:C

Ans. b. Ulnar nerve lies medially to distal l/3 of artery; c. Radial nerve lies posteriorly distal 1/3 of artery

Axillary artery

- It is the main artery of upper limb. It begins at the level of outer border of first rib as a continuation of subclavian artery. It ends at the level of lower border of teres major to continue as brachial artery.
- The axillary artery is covered anteriorly by pectoralis minor, which divides it into three parts:?
- First part :- This part is proximal to upper border of pectoralis minor, i.e. extends from outer border of first rib to upper border of pectoralis minor. The branch of first part is Superior thoracic artery.
- Second part :- This part is behind pectoral is minor. It gives following branches.
- Thoracoacromial artery :- It pierces clavipectoral fascia and gives following branches :-

1. Acromial
2. Pectoral,
3. Clavicular and deltoid.

Lateral thoracic artery

- Third part :- This part is distal to lower border of pectoralis minor, i.e. extends from pectoralis minor (lower border) to teres major (lower border). It gives following branches –
- Subscapular artery:- It gives off circumflex scapular artery and then continues us thoracodorsal artery.
- Anterior circumflex humeral artery.
- Posterior circumflex humeral artery.
- Anterior and posterior circumflex arteries (both are branches of 3rd part of axillary artery) forms anastomosis around surgical neck of humerus.

70. Which of the following structure (s) pass through adductor magnus

a) Femoral vessel

b) Femoral nerve

c) Femoral sheath

d) Saphenous nerve

e) Tibial nerve

Correct Answer - A

Ans. a. Femoral vessel

- Femoral artery pass through an opening in the adductor magnus to become continuous with the popliteal artery
- Femoral vein enters the thigh by passing through an opening in the adductor magnus as a continuation of the popliteal vein

71. Which of the following statement is true about Pinna except:

a) In Treacher-Collins syndrome malformed pinna may be present

b) Made up of elastic cartilage

c) Develop from lst pharyngeal cleft only

d) Helps in localization of sound

e) May involves in relapsing perichondritis

Correct Answer - C

Ans. c. Develop from lst pharyngeal cleft only

- **First branchial cleft is the precursor of external auditory canal.**
- Around the sixth week of embryonic life, a series of six tubercles appear around the first branchial cleft
- **Branchial clefts are ectodermal in origin.**
- Pinna develops from **1st and 2nd pharyngeal arch**

72. Paired laryngeal cartilage (s) is/are:

a) Thyroid

b) Arytenoid

c) Corniculte

d) Cricoid

e) Cuneiform

Correct Answer - B:C:E

Ans. b. Arytenoid; c. Corniculte;e. Cuneiform

Laryngeal cartilages

- Thyroid (unpaired)
  - It is the largest of all laryngeal cartilages. It is 'V' shaped with right and left lamina. Both laminae (alae) meet anteriorly forming an angle of 90° in males and 120° in females. Vocal cords are attached to the middle of thyroid angle.
- Cricoid (unpaired)
  - It is the only cartilage forming a complete ring, therefore is shaped like a ring. It articulates with arytenoid cartilage to form cricoarytenoid joint, a type of synovial joint .
- Epiglottis (unpaired)
  - It is leaf-shaped elastic cartilage (in adults). It is omega shaped in children. It forms the anterior wall of laryngeal inlet.
- Arytenoid cartilage (paired)
  - Each Arytenoid cartilage is pyramidal in shape. Base articulates with cricoid cartilage, and apex supports the corniculate cartilage. A vocal process directed anteriorly and gives attachment to vocal cord. A muscular process directed laterally and gives attachment to intrinsic laryngeal muscles.

- Corniculate cartilage (of Santorini) : Paired
  - Articulates with apex of Arytenoid cartilage
- Cuneiform cartilage (of Wrisberg) : Paired
  - Situated in aryepiglottic fold in front of corniculate cartilage.

73. All are true about mediastinum except:

a) Heart passes through superior mediastinum

b) Heart passes through middle mediastinum

c) Thymus remnant may present in middle mediastinum

d) Posterior boundary of posterior mediastinum corresponds to Tl-T4 vertebrae

e) Lower border of anterior mediastinum is extended more than posterior mediastinum

Correct Answer - A:C:D:E

Ans. a. Heart passes through superior mediastinum; c. Thymus remnant may present in middle mediastinum; d. Posterior boundary of posterior mediastinum corresponds to Tl-T4 vertebrae; e. Lower border of anterior mediastinum is extended more than posterior mediastinum

- Superior mediastinum: The region superior to the sternal angle containing the aortic arch and its three branches, the superior vena cava (SVC) and the brachiocephalic veins, the trachea, the esophagus, and the phrenic and vagus nerves. The superior mediastinum also contains the thymus; however, in an adult, the thymus is usually atrophied and presents as a fatty mass.
- Anterior mediastinum: The region between the sternal angle, the deep sternal surface, the pericardial sac, and the diaphragm. The anterior mediastinum contains fat and areolar tissue and the inferior part of the thymus or its remnant.
- Middle mediastinum: This region contains the pericardial sac and heart.
- Posterior mediastinum: The region containing anatomic structures

deep to the pericardial sac, including the thoracic portion of the descending aorta, the azygos system of veins, the thoracic duct, the esophagus, and the vagus and sympathetic nerves.

74. True about medial meniscus:

a) Made up of hyaline cartilage

b) Injury of lateral meniscus is more frequent than medial meniscus

c) C shaped

d) Fixed to medial collateral ligament

e) Inner part is more avascular

Correct Answer - C:D:E

Ans. c. C shaped; d. Fixed to medial collateral ligament ; e. Inner part is more avascular

Medial Meniscus	**Lateral Meniscus**
- Semilunar (c) shaped (less circular)	- Semicircular (C) shaped (more circular)
- Larger in radius /diameter but narrower in body & thinner in periphery	- Smaller in radius /diameter but wider in body & thicker in periphery
- Posterior horn is larger than anterior horn	- Anterior & posterior horn are uniform in size
- Covers lesser (-65%) of tibial articular surface	- Covers more (-85%) of tibial articular surface
- Entire periphery is attached to joint capsule (medial capsular ligament)	- Peripheral area where popliteus tendon crosses the joint through popliteus hiatus is not attached
- Attached to medial collateral ligament	- Not attached to lateral collateral ligament

- Does not attach to either cruciate ligaments	- Attached to both cruciate ligaments, and posterior horn receives anchorage to medial femoral condyles by either the ligament of Humphry or ligament of Wrisberg, depending on which is present. It is also attached posteriorly to the fascia covering popliteus muscle and the arcuate complex at posterolateral corner of knee.
- *Less mobile* because of its attachment	- More mobile b/o its attachments
- More prone to injury	- Less prone to injury

75. Which of the following statement is/are true about oculomotor nerve:

a) Arise from pons

b) Edinger-Westphal nucleus gives rise to parasympathetic supply of oculomotor nerve

c) Arise from medulla

d) Passes through interpeduncular fossa

e) Related to medial wall of cavernous sinus

Correct Answer - B:D

Ans. b. Edinger-Westphal nucleus gives rise to parasympathetic supply of oculomotor nerve ;d. Passes through interpeduncular fossa

NUCLEI:

1. General somatic efferent:

- Through **oculomotor nucleus** for movement of eyeball supplying **all extraocular muscles except Superior Oblique (SO) and Lateral Rectus (LR).**

2. General visceral efferent (parasymapthetic):

- Through **Edinger- Westphal nucleus** for pupillary contraction and accomodation.

3. General somatic afferent:

- Carries proprioceptive fibres from the extraocular muscles to mesencephalic nucleus of trigeminal.
- Occulomotor nucleus (for general somatic efferent) and Edinger-Westphal nucleus together form **oculomotor nuclear complex.**

STRUCTURE:

Midbrain

↓
Third nerve nucleus(at the level of the **superior colliculus ventral to the cerebral aqueduct, on the pre-aqueductal grey matter**)
↓
Red Nucleus
↓
Substantia Nigra
↓
Exit through Interpeduncular fossa
↓
Invested with a sheath of pia mater
↓
Passes between the superior cerebellar & posterior cerebral arteries **(Nerve compressed by aneurysm of posterior communicating artery)**
↓
Pierces the dura mater
↓
Pass b/w free and attached borders of tentorium cerebelli
↓
Cavernous sinus
↓
Receives filaments from the cavernous plexus of the sympathetic nervous system and communicating branch from V1
↓
Superior orbital fissure
↓
Orbit
↓
Superior and Inferior Branch

76. Derivative (s) of mesonephric duct includes:

a) Some part ofprostatic Urethra

b) Seminal vesicle

c) Round ligament of uterus

d) Vas deferens

e) Ductusdeferens

Correct Answer - A:B:D:E

Ans. a. Some part ofprostatic Urethra; b. Seminal vesicle; d. Vas deferens; e. Ductusdeferens

- The Wolffian duct or mesonephric duct forms the epididymis, vas deferens and seminal vesicles. Testosterone directs the development of Wolffian duct.
- Trigone of the bladder develop from the caudal end of the mesonephric duct.
- A pair of ureteric bud grow upwards from the distal mesonephric duct near its insertion into the cloaca to form the renal pelvis, calyces and collecting ducts.
- Most of the prostate gland develop from the same primordial area of urogenital sinus that forms the vaginal plate in females.
- The Mullerian or paramesonephric duct forms the fallopian tubes, uterus and upper third of the vagina.

77. All are true regarding Uterus except:

a) Lymph vessels from fundus drain to para-aortic lymph nodes

b) Broad ligament provides primary support to uterus

c) Mainly supplied by uterine arteries

d) Posterior surface is related to intestine

e) All

Correct Answer - B

Ans.b. Broad ligament provides primary support to uterus

BLOOD SUPPLY AND LYMPHATICS:

- **Uterine and ovarian artery**
- Venous drainage is via a plexus in the broad ligament that drains into the **uterine veins.**
- Lymphatic drainage : **iliac, sacral, Paraaortic** and **inguinal lymph nodes.**

LIGAMENTS:

- **Pelvic diaphragm, Uterosacral ligament & Transverse cervical ligament are primary support of uterus**
- The tone of the pelvic floor provides the primary support for the uterus. Some ligaments provide further support, securing the uterus in place.They are:
- **Broad Ligament:** This is a double layer of peritoneum attaching the sides of the uterus to the pelvis. It acts as a mesentery for the uterus and contributes to maintaining it in position.It do not provide primary support.

78. All are true about ulnar nerve except:

a) Root value C8TI

b) Pass through cubital tunnel

c) Supply flexor digitorum superficialis

d) Supply flexor carpi ulnaris

e) Passes behind medial epicondyle

Correct Answer - C

Ans. c. Supply flexor digitorum superficialis

Nerve course:

- Root value of ulnar nerve is C7, C8 6 T1.
- Ulnar nerve (C8, T1) arises from the medial cord of the brachial plexus & descends in the interval b/w the axillary artery & vein
- At elbow, ulnar nerve passes behind the medial epicondyle
- The cubital tunnel is a channel which allows the ulnar nerve to travel over the elbow

Various branches of ulnar nerve are :?

- In arm : No branch.

In forearm : There are following branches :?

- Muscular : In proximal part of forearm it supplies flexor carpi ulnaris and **medial** half of flexor digitorumprofundus.
- Cutaneous : There are two cutaneous branches in forearm:- Superficial terminal branch : It supplies palmaris brevis and skin of palmar surface of medial 11/2 fingers.
  - Palmar cutaneous branch : Supplies skin over the hypothenar eminence.
  - Dorsal (posterior) cutaneous branch : Supplies skin over medial 1/3 of dorsum of hand and dorsal surface of medial 11/2 fingers.

- In hand : Ulnar nerve enters the palm by passing superficial to flexor retinaculum and divides into two terminal branches :?
- Deep terminal branch : It supplies adductor pollicis, all interossei, medial two (3^{rd}& 4^{th})lumbricals and all hypothenar muscles except palmaris brevis (i.e. abductor digitiminimi, flexor digitiminimi, opponensdigitiminimi).

79. True regarding saphenous vein:

a) Long saphenous vein-formed as continuation of medial side of deep venous arch

b) Long saphenous vein- situated posterior to medial malleolus

c) Long saphenous vein- closely related to saphenous nerve

d) Short saphenous vein- open into great saphenous vein

e) Short saphenous vein- associated with sural nerve

Correct Answer - A:C:D:E

Ans. a. Long saphenous vein-formed as continuation of medial side of deep venous arch; c. Long saphenous vein- closely related to saphenous nerve; d. Short saphenous vein- open into great saphenous vein; e. Short saphenous vein- associated with sural nerve

Long Saphenous Vein

- Formed by the union of the medial end of dorsal venous arch with the medial marginal vein
- Passes upwards in front of the medial malleolus, crosses the lower one-third of the medial surface of tibia obliquely & runs along its medial border to reach the back of the knees
- The saphenous nerve runs in front of the great saphenous Vein

Small/Short Saphenous Vein :

- Formed on the dorsum of foot by the union of the lateral end of dorsal venous arch with the lateral marginal vein
- Enters the back of the leg by passing behind the lateral malleolus
- Connected with the great saphenous vein & with the deep veins & is accompanied by the sural nerve

80. Branch ofinternal iliac artery is/are:

a) Inferiorvesical artery

b) Inferior epigastric artery

c) Iliolumbar artery

d) Internal pudendal artery

e) Obturator artery

Correct Answer - A:C:D:E

Ans.a. Inferior vesical artery; c. Iliolumbar artery; d. Internal pudendal artery; e. Obturator artery

Branches of anterior division of internal iliac artery are :

- Superior vesical
- Middle rectal
- Inferior vesical (in males),
- Internal pudendal,
- Vaginal (in females),
- Uterine (in females)
- Obturator
- Inferior gluteal.

Branches of posterior division are :

- Iliolumbar
- Lateral sacral
- Superior gluteal.

81. True about parietal peritoneum:

a) Supplied by lower 5 thoracic & 1st lumbar

b) Supplied by lower 4 thoracic & upper 3 lumbar

c) Pain is somatic in nature

d) Stretching of parietal peritoneum cause pain

e) None

Correct Answer - A:C

Ans. a. Supplied by lower 5 thoracic & 1st lumbar; c. Pain is somatic in nature

Parietal Peritoneum:

- It is sensitive to pain, temperature, touch & pressure
- The parietal peritoneum lining the anterior abdominal wall is supplied by the lower 6 thoracic & 1st lumbar nerves that is, the same nerves that innervate the overlying muscles & skin .
- The central part of diaphragmatic peritoneum is supplied by the phrenic nerve; peripherally, diaphragmatic peritoneum is supplied by lower six thoracic nerves .
- The parietal peritoneum in the pelvis is mainly supplied by the obturator nerve, a branch of the lumbar plexus

82. Compression of cervical rib can causes:

a) Thenar hypertrophy

b) Neurovascular symptom

c) Reynaud's phenomenon

d) C8Tl paraesthesia

e) All

Correct Answer - B:C:D

Ans. b. Neurovascular symptom; c. Reynaud's phenomenon; d. C8Tl paresthesia

- The lower trunk of the brachial plexus (C8, Tl), together with the subclavian artery may be angulated over a cervical rib (thoracic outlet syndrome) .
- There is a slow insidious onset of wasting of the small muscles of the hand, which often starts on the lateral side with involvement of the thenar eminence & first dorsal interosseous .
- There is pain & paraesthesia in the medial aspect of the forearm extending to the litde finger

83. Features of stellate ganglion lesions include:

a) Miosis

b) Vasodilation in ipsilateral arm

c) Mydriasis in contralateral eye

d) Mydriasis in ipsilateral eye

e) Visual loss

Correct Answer - A:B

Ans. a. Miosis; b. Vasodilation in ipsilateral arm

Horner occur due to injury of Tl sympathetic trunk . There is ptosis, miosis, anhydrosis (vasodilation & lack of thermal sweating), enophthalmos (sunken globe), loss of cilio-spinal reflex, narrow palpebral fissure of affected side

84. True about attachment of suprapleural membrane:

a) Attached to Clavicle

b) Attached to lst rib & its costal cartilage

c) Attached to 2nd rib & its costal cartilage

d) Attached to junction of manubrium & body of sternum

e) Attached to tip of the transverse process of the 7th cervical vertebrae

Correct Answer - B:E

Ans. b. Attached to lst rib & its costal cartilage; e. Attached to tip of the transverse process of the 7th cervical vertebrae

Suprapleural Membrane:

- It is tent shaped fibrous sheet attached laterally to the medial border of the lst rib & costal cartilage .
- Medially it attached to the fascia investing the structures passing from the thorax into the neck .
- It is attached at its apex to the tip of the transverse process of the 7th cervical vertebrae

85. True about anatomy of Eustachian tube:

a) Aerate middle ear

b) Open during swallowing

c) Lager & wider in adult than children

d) More horizontal in infant & children

e) Open in oropharynx

Correct Answer - A:B:D

Ans. a. Aerate middle ear; b. Open during swallowing; d. More horizontal in infant & children

- The Eustachian tube/auditory tube in the adult is 36 mm in length. **(Range 32-38 mm)** From its **tympanic** end, it runs downward forward and medially joining an angle of 45° with horizontal.
- In infants, the tube is shorter, wider and is more horizontal.
- The tympanic end of the eustachian tube is bony and is situated in the anterior wall of middle ear.
- The pharyngeal end of the tube is slit like and is situated in the lateral wall of the nasopharynx, 1-1.25 cm behind the posterior end of inferior turbinate.
- Normally Eustachian tube (ET) is closed and opens intermittently during yawning, swallowing and sneezing through active contraction of Tensor vili palatini muscle.

Normal tubal function:

- Ability of tube to equilibrate positive & negative pressures to ambient pressure.
- Done both in patients with perforated or intact tympanic membrane.

86. Which of the following sinuses open into middle meatus:

a) Frontal sinus

b) Anterior ethmoidal sinus

c) Posterior ethmoidal sinus

d) Maxillary sinus

e) Sphenoid sinus

Correct Answer - A:B:D

Ans. a. Frontal sinus; b. Anterior ethmoidal sinus; d. Maxillary sinus

Part of lateral nasal wall	**Openings**
Inferior	Nasolacrimal duct
Middle	Frontal sinus, Maxillary sinus, Anterior ethmoidal sinus
Superior	Posterior ethmoidal sinus
Sphenoethmoidal recess	Sphenoid sinus