19. Root value : ilio – inguinal nerve → L_1 genitofemoral nerve → L_1, L_2. Lateralcutaneous nerve of thigh →L_2, L_3. Iliohypogastric → L_1.
20. Lumbar plexus (L_1 – L_5).
21. a) Housemaid's knee : Enlarged prepatellar bursa.
b) Miner's beat knee : Infected prepatellar bursa.
c) Clergyman's knee : Enlarged infrapatellar bursa.
22. Illiotibial tract : Thickened lateral part of fascia 5 cm wide. Gluteus maximus and tensor fascia lata are inserted in the upper part.
23. Saphenous opening is in fascia lata. 4 cm below and 4 cm cateral to the pubic tubercle. It is 2.5 cm X2 cm. Closed by cribriform fascia.
24. Femoral triangle : Bounded laterally by Sartorius, medially by adductor longus, base by inguinal ligament. It is continuous below with the adductor canal. Femoral vein is medial and femoral nerve is lateral to femoral artery (vein – artery – nerve) contents : Femoral artery with branches, femoral vein with tributaries, femoral nerve, femoral branch of genitofemoral nerve, lateral cutaneous nerve of thigh, nerve to pectineus, deep inguinal lymph nodes.
25. Anterior wall of femoral sheath is formed by fascia transversalis and posterior wall by fascia iliaca.
26. Femoral canal is the medial compartment of femoral sheath (1.5 X 1.5 cm). Upper part/ base is called femoral ring. Femoral canal is wider in females.
27. Obturator artery is a branch of internal iliac artery. But, abnormally, it may arise from inferior epigastric artery.
28. Muscles in the anterior compartment of thigh are supplied by femoral nerve (L_2, L_3, L_4).
29. Both illiacus and psoas major have common insertion in the lesser trochanter. Both are supplied by spinal segments of L_2, L_3.
30. Adductor canal (= Hunter's/ subsartorial canal) : An intermuscular space on the medial side of thigh. Bounded anteriorly by vastus medialis, posteriorly by adductor longus (above) and magnus (below). Roof is overlapped by Sartorius. Contents : femoral artery and vein, saphenous nerve, nerve to vastus medialis, two divisions of obturator nerve.
31. Last branch of femoral artery : descending branch of genicular artery.
32. Quadriceps is an extensor to the knee joint.

39. What is not true about deltoid ligament
a) triangular in shape b) attached to lateral meniscus c) crossed by tendons of tibialis posterior and flexor digitorum longus d) none.
40. Which of the following is not an everter of foot?
a) peroneus longus b) peronus brevis c) tibialis anterior d) all.
41. Patients with talipes equinus walks on
a) toes b) heel c) lateral border d) medial border.
42. All of the following are components of talipes equinovarus except
a) inversion b) adduction c) plantar flexion d) walks on inner border of foot.
43. Unlocking of knee is due to
a) popliteus b) hamstrings c) quadriceps d) gastrocnemius.
44. All of the following muscles have dual nerve supply except
a) pectineus b) adductor magnus c) adductor longus d) biceps femoris.
45. All of the following muscles act on both hip and knee joints except :
a) rectus femoris b) sartorius c) short head of biceps d) long head of biceps.
46. Cuboid bone has groove for tendon of
a) peroneus longus b) peroneus brevis c) flexor hallucis longus d) flexor hallucis brevis.
47. Abduction of hip joint is accomplished by
a) gluteus medius b) gluteus maximus c) gluteus minimus d) illiacus.
48. Cutaneous supply of lateral aspect of leg is by
a) saphenous nerve b) superficial peroneal c) common peroneal d) sural nerve.
49. Bone having no muscle attachment
a) talus b) navicular c) cuboid d) medial cuneiform.
50. Which of the following is a wrong match?
a) knee joint – saddle joint b) hip joint – sinoval joint c) ankle joint – syndesmosis d) calcaneo – cuboid joint – saddle joint.

Ans :- 1) c, 2) b, 3) a, 4) d, 5) c, 6) a, 7) c, 8) a, 9) d, 10) c, 11) a, 12) d, 13) c, 14) d, 15) a, 16) b, 17) d, 18) a, 19) d, 20) b, 21) a, 22) b, 23) a, 24) a, 25) c, 26) a, 27) b, 28) d, 29) c, 30) d, 31) c, 32) a, 33) b, 34) b, 35) a. 36) a, 37) b, 38) d, 39) b, 40) c, 41) a, 42) d, 43) a, 44) c, 45) c, 46) a, 47) b, 47) a, 48) d, 49) a, 50) c.

29. Muscles of hypothener eminence is supplied by

a) radial nerve b) ulnar nerve c) median nerve d) b + c.

30. Function of lumbricals is

a) adduction of digits b) abduction of digits c) flex the MCP joint and extend the I.P. joint of digit d) extend the MCP joint and flex the I.P. joint of digit.

31. Froment sign is to test

a) median nerve b) ulnar nerve c) radial nerve d) musculo cutaneus nerve.

32. Space of parona is in

a) forearm b) wrist c) palm d) dorsum of hand.

33. Radial bursa is synovial sheath of the tendon of

a) flexor policis longus b) flexor digitorum superficialis c) Flexor digitorum profundus d) b+c.

34. Lateral epicondylitis is called –

a) Miner's elbow b) student's elbow c) Tennis elbow d) golfer's elbow.

35. Contents of carpal tunnel are all except

a) median nerve b) tendon of flexor policis longus c) tendon of flexor digitorum brevis d) tendon of flexor digitorum superficialis.

Ans :- 1) b, 2) b, 3) c, 4) c, 5) a, 6) b, 7) d, 8) b, 9) d, 10) a, 11) c, 12) a, 13) d, 14) b, 15) a, 16) b, 17) d, 18) b, 19) a, 20) c, 21) a, 22) b, 23) a, 24) b, 25) c, 26) b, 27) d, 28) a, 29) b, 30) c, 31) b, 32) a, 33) a, 34) c, 35) c.

ANATOMY

THORAX

1. Incidence of cervical rib: 0.5%

2. Cervical rib causes pressure over lower trunk of brachial plexus and wasting of small muscles of hand.

3. Rib notching in coarctation of aorta is due enlargement of posterior intercostal arteries.

4. Diaphragm at the thoracic inlet = Sibson's fascia = suprapleural membrane. It is the flattened tendon of scalenus minimius muscle.

5. Important structures passing through thoracic inlet : Trachea, oesophagus, apics of lungs, branches of aorta, internal thoracic, superior intercostals arteries of both sides, phrenic, vagus, 1st thoracic nerves of both sides,

posterior mediastinum : oesophaguns, descending aorta, azygos and hemiazygos veins, vagus and splanchnic nerves. Lymph nodes are present in all the 3 compartments.

51. Veins are on right side and arteries on left side of mediastinum. 'Dead space' is more on right side, hence tumours / infections project more on left side.

52. Serous pericardium is lined by mesothelium. Serous and parietal pericardium are continuous at the root of great vessels.

53. Transverse sinus is a horizontal gap between arterial and venous ends of heart tube.

54. Arterial supply of pericardium : Internal thoraccic, musculophrenic and descending thoracic aorta.

55. Atria and ventricles of heart are separated by coronary sulcus (A.V. groove). Cardiac apex is formed by left ventricle. It is in left 5^{th} intercostal space 9 cm. lateral to midsternal line.

56. Atrial fibres are arranged in two layers – superficial and deep. Ventricular fibres are arranged in three layers – superficial, middle and deep. Of these, middle layer is the thickest.

57. Sulcus terminalis is a groove along the right border of right atrium. S.A. node is situated at the upper part of sulcus. Sulcus terminalis is formed by crista terminalis. A.V. node is at the lower part of the septum. (muscular ridge)

58. Veins draining into right atrium : SVC, IVC, Coronary sinus, anterior cardiac veins, thebasian veins (venae cordis minimi).

59. Fossa ovalis, limbus fossa ovalis (or annulus ovalis) are in interatrial septum.

60. Sinus venorum is smooth posterior part and pectinate part is rough anterior part of right atrium. Musculi Pectinati are located in the anterior part.

61. Trabeculae carneae are muscular ridges present in right ventricle $\pm$ left ventricle. Right ventricle has 3 papillary muscles : anterior, posterior and septal. Of these, antenior is the thickest. Lt ventricle has 2 papillary muscles – anterior and posterior. Overall, left ventricular muscles are thicker than right ventricle – (3 : 1).

62. Papillary muscles are attached to the cusps of the valves by chordate tendinae.

83. Portal vein is formed by union of superior mesenteric vein and splenic vein behind neck of pancreas (L_2 level). Rt branch receives cystic vein before entering right lobe and Lt branch receives ligamentum teres, ligamentum venosum and paraumbillical veins before entering Lt lobe. In addition to these tributaries, others include right and left gastric, and superior pancreatico – duodenal veins.

84. Portal venous pressure : 5-15 mm Hg (average 6-8 cm of water). Portal hypertension : >40 mm Hg. (clinically : splenomegaly, ascites, diameter of ≥ 13 mm).

85. Common sites of porto – systemic communications : umbilicus, lower end of esophagus, anal canal, bare area of liver, posterior abdominal wall.

86. Structures at the porta : Portal vein, hepatic artery,. Hepatic ducts.

87. Accessory hepatic duct : Present in 15% of population. Generally arises from right lobe of liver and end in gall bladder or common hepatic duct.

86. Hartmann's pouch is dilated neck of gall bladder posteromedially.

89. Cystic duct : Arises from neck of gall bladder and terminates at common hepatic duct at an acute angale to form bile duct. Spiral valves of Heister are mucous folds – not true valves (3 – 12 in number).

90. Bile duct : After the cystic duct joins the common hepatic duct, it becomes CBD, 7.5 to 8 cm long, 6 mm wide. Ends at ampulla of vater (along with main pancreatic duct) which opens at the summit of major duodenal papilla. CBD & MPD may open separately in the papilla also.

91. Sphincter choledochus is located at the lower end of CBD before termination. Always present and is essential for filling the gall bladder. Sphincter pancreaticus is seen at the MPD before it opens in ampulla of vater. Not always present. Sphicter surrounding the ampulla of vater sphincter of oddi.

92. Principal arterial supply of biliary apparatus : cystic artery. It commonly arises from right hepatic artery but may arise from common hepatic artery or gastroduodenal artery.

93. Maximum concentrating ability of gall bladder : 10 times.

94. Courvoisier's law : Overdistended GB in a jaundiced patient is possibly due to mass (lower end of CBD or carninoma head of pancreas) not due to calculus.

95. Murphy's sign : Catch in the breath when pressed at the tip of 9^{th} costal cartilage in case of acute cholecystitis.

33. Which part of duodenum is horizontal?

a) D_1 b) D_2 c) D_3 d) D_4

34. Meckel's diverticulum – not true is

a) seen in 2% of population b) 2 cm long c) 60 cm from ileo – caecal gunction d) may contain gastric mucosa.

35. Which of the following parts of large gut is fixed?

a) appendix b) ascending colon c) transverse colon d) sigmoid colon.

36. Which of the following is not seen small intestine?

a) Payer's Patches b) crypt of Liberkuhn c) villi d) appendices epiploicae.

37. Commonest type of appendix

a) retrocaecal b) pre-ileal c) postileal d) precaecal.

38. Thphilitis is inflammation of

a) caecum b) ileum c) jejunum d) meckel's divereticulum.

39. Physiological hernia returns at

a) 8^{th} week b) 10^{th} week c) 12^{th} week d) 16^{th} week.

40. Coeliac trunk originates at the level of

a) D_{11} b) D_{12}/L_1 c) L_1 d) L_1/L_2

41. Regarding branches of aorta which is wrong?

a) cystic artery is a branch of rt hepatic artery b) right gastric artery is a branch of coeliac trunk c) splenic artery is the largest branch of coeliac trunk.

d) Superior mesenteric artery arises at L_1 level.

42. All of the following are true of portal vein except

a) originates at the level of L_2 b) originates behind neck of pancreas c) normal portal venous pressure is 15 – 18 mm Hg d) left and right gastric vein are tributaries.

43. Incidence of accessory hepatic duct

a) 15% b) 18 – 20% c) 10 – 12% d) 5 -8%.

44. Spiral valves of Heister are seen in

a) right hepatic duct b) left hepatic duct c) common hepatic duct d) cystic duct.

45. Which of the following is not true regarding extrahepatic biliary tree?

a) cystic duct joins the common hepatic duct at an angle of 90 - 100^0 to form CBD. b) CBD is approx 7.5 – 8 cm long c) CBD ends at amphulla of vater along with MPD d) sphincter choledochus is seen at lower end of CBD.

46. Principal arterial supply of biliary tree is

a) right hepatic artery b) left hepatic artery c) cystic artery d) hepato – duodenal artery.

47. Long axis of spleen is parallel to long axis of

a) D_{10} b) 10^{th} rib c) D_{11} d) 11^{th} rib.

48. Intrasplenic pressure is an indirect measurement of pressure of

a) portal vein b) IVC c) Rt atrial compliance d) hepatic veins.

49. Level of origin of superior mesenteric artery

a) D_{12} b) L_1 c) L_2 d) L_3

50. Which of the following is not a common site of porto-systemic communication?

a) umbillicus b) bare of liver c) lower end of esophagus d) recto-sigmoid junction.

Ans : 1) c, 2) c, 3) d, 4) a, 5) b, 6) a, 7) b, 8) a, 9) b, 10) b, 11) d, 12) b, 13) c, 14) c, 15) b, 16) a, 17) b, 18) c, 19) b, 20) b, 21) a, 22) b, 23) a, 24) c, 25) c, 26) a, 27) d, 28) d, 29) b, 30) a, 31) c, 32) c, 33) c, 34) b, 35) b, 36) d, 37) a, 38) a, 39) b, 40) b, 41) b, 42) c, 43) a, 44) d, 45) a, 46) c, 47) b, 48) a, 49)b, 50) d.

ANATOMY
ABDOMEN PART II

105. J shaped structures : stomach, pancreas.

106. Organ more wide than their length : caecum, pituitary, prostate, pons.

107. Pancreas lies posterior to stomach, being separated from it by lesser sac.

108. Pancreas has 3 borders. Superior (related to 1^{st} part of duodenum), right lateral (related to second part of duodenum) and inferior (related to 3^{rd} part of duodenum). No left lateral border.

109. Tail. Of pancreas lies on : Lieno-renal ligament.

110. Main pancreatic duct = Duct of wirsung runs close to the posterior surface of pancreas. ≤ 3 mm in diameter. Opens in 2^{nd} part of duodenum at ampulla of vater, which in turn, opens at the summit of major duodenal papilla.

111. Accessory pancreatic duct = duct of santorini crosses the main duct and opens in minor duodenal papilla.

112. Like duodenum, pancreas also has dual source of development and dual arterial supply – coeliac trunk and superior mesenteric artery. Supplied by : splenic artery, superior and inferior pancreatico duodenal.

128. Anal Canal : 3.8 cm long – upper and middle parts are 15 mm each, lower part is 8 mm. Upper part is mucous part, middle part is the transitional zone and lower part is cutaneous. Middle and lower parts are separated by white line of Hilton. Skin covering with sebaceous and sweat glands are seen in lower part.

129. Internal anal canal is involuntary. It surrounds the upper 30 mm of anal canal (above Hilton's line). External and sphincter is voluntary and surrounds the lower 8 mm of anal canal (below Hilton's line). It is made of striated muscle.

130. Anorectal ring is responsible for rectal continence. It is formed by puborectalis, deep external and internal sphincters. Puborectalis is absent anteriorly.

131. Anal valves form a line at the middle of internal anal sphincter called pectinate line.

132. Anal canal is supplied by superior rectal artery (above pectinate line) and inferior rectal artery below pectinate line.

133. Primary internal piles are seen at 3, 7, 11 o'clock position, piles in other location → secondary.

134. External pile – false pile : occurs below the pectinate line. These are painful but do not bleed on straining.

135. Rectum and upper 15 mm of anal canal are endodermal in origin (above pectinate line). Lower 23 mm develops from ectoderm.

136. Principal muscle of respiration : diaphragm.

137. Diaphragm arises from : (a) sterna part from xiphoid process (b) costal part from lower 6 ribs and (c) lumbar part from lumbar vertebrae forming right and left crura.

138. Right crus of diaphragm is larger and stronger than left. Medial margin of two crura form a tendinous are anterior to aorta. This is called median arcuate ligament.

139. Central tendon of diaphragm lies at the level of 6^{th} costal cartilage.

140. Levels of major opening of diaphragm : (a) oesophageal : T_{10} (b) vena caval - T_8 (c) aortic – T_{12} .

141. Structures passing through the major openings of diaphragm (a) oesophageal : oesophagus, esophageal branches of left gastric artery , gastric

153. Renal fascia or fascia of Gerota has anterior layer called fascia of Toldt and posterior layer called fascia of Zuckerkandl. Superiorly, it encloses suprarenal gland, inferiorly encloses ureter and laterally, it fuses with fascia transversalis.
154. Accessory renal artery is seen in 30% cases.
155. Divisions/ generations of renal artery : segmental → lobar → interlobar → arcuate → interlobular. Interlobular arteries do not anastomose with each other – they are end arteries.
156. Arterial supply of medulla : efferent arterioles of the Juxtaglomerular glomeruli. These divide into vasa recta.
157. Free circulation is seen in cortex (glomerular) and restricted circulation is in medulla.
158. Constrictions of ureter : pelviureteric junction, brim of lesser pelvis where it crosses the terminal of common iliac artery, during passage through bladder wall.
159. Genito femoral nerve lies posterior to ureter.
160. Ductus deferens crosses the ureter and seminal vesicle lies behind the ureter in males.
161. In females, ureter lies in lower and medial part of broad ligament of uterus. It is crossed by uterine artery.
162. Kidney develops from : metanephros.
163. Congenital polycystic kidney results from failure of union of collecting and secretary parts of kidney.
164. Suprarenal glands are located at 11^{th} intercostal space and 12^{th} rib level.
165. Right suprarenal gland is triangular or pyramidal and left one is semilunar in shape.
166. Right suprarenal gland has apex, base, 2 surfaces and 3 borders whereas left gland has upper and lower ends, two borders and 2 surfaces. Apex of right gland is related to bare area of liver, upper end of left gland is related to posterior end of spleen.
167. Middle suprarenal artery is a direct branch of abdominal aorta. Superior suprarenal artery is a branch of inferior phrenic artery and inferior suprarenal artery is a branch of renal artery.
168. Location of accessory suprarenal gland : around the main gland, in spermatic cord, epididymis, broad ligament of uterus.
169. Suprarenal cortical cells have numerous vacuoles in the cytoplasm.

17. Froin's syndrome : obstruction in sub arachnoid space by spinal tumour causes yellow discolouration of fluid below the level of obstruction. High protein – normal cell count (albunio – cytological dissociation). Queckenstedi's test : No sudden rise fall of CSF pressure by coughing or jugular comnpression.
18. Meckel's cave (= trigeminal cave) : A recess of dura matter in relation to attached margin of tentorium.
19. Cavernous sinus : paired on either side of body of sphenoid bone. Floor is formed by endosteal dura matter. Roof, lateral and medial wall-formed by meningeal dura matter. Structures passing in the lateral wall – 3rd, 4th, ophthalmic and maxillary nerves + trigeminal ganglion. 6th nerve and internal carotid artery with its venous and sympathetic plexus run through the centre of the sinus. Tributaries : superior ophthalmic vein, inferior ophthalmic vein, central retinal vein, superior, middle and inferior cerebral veins. Right and left intercommunicate. Drain into – transverse sinus, internal jugular vein, facial vein, pterygoid plexus. In carotid cavernous fistula, superior ophthalmic vein is enlarged.
20. a) Superior sagittal sinus : starts by union of tiny meningeal veins and ends by being continuous with right transeverse sinus. May be continuous with left also. b) Inferior sagittal sinus joins great vein of Galen to form straight sinus. Straight sinus is continuous with left transverse sinus (may be right also). Each transverse sinus becomes continuous with sigmoid sinus. Sigmoid sinus becomes continuous with internal jugular vein. Confluence of venous sinuses is called 'torcula'.
21. There are paired and unpaired dural venous sinuses. Superior sagittal, inferior sagittal, straight sinus – are unpaired. Transeverse sinus, sigmoid sinus, cavernous sinus, super and inferior petrosal sinuses are paired.
22. Cavenous sinus drains into transverse sinus via superior petrosal sinus and into internal jugular vein via inferior petrosal sinus.
23. Middle meningeal artery : A branch of maxillary artery (1st part). Enters the middle cranial fossa via foramen spinosum. It is the artery of extradural haemorrhage – frontal (anterior) branch is commonly involved which is larger than pariental branch.
24. Cervical part of ICA has no branch. Hypophyseal branches (to pituitary) arise from cavernous part. Cerebral part gives rise to :- anterior and middle cerebral, posterior communicating, ophthalmic, anterior choroidal arteries.

25. Extra ocular muscles include : a) Voluntary : all recti (4), obliques (2), levator palpebrae superioris (b) involuntary : superior tarsal (deeper portion of levator palpebrae superioris), inferior tarsal and orbitalis. All recta are inserted into sclera posterior to limbus. Nerve supply : SO – 4^{th} (trochlear), LR 6^{th} and all others – 3^{rd}.

26. Optic nerve : Formed by axons of ganglion cell layer of retina 4 cm long. Enclosed by 3 meningeal sheaths.

27. Oculomotor (3^{rd} nerve) : Somatic – motor nerve. Innervates both extra ocular and intraocular muscles. Causes – contration of pupil and accommodation, somatic afferent and proprioception to muscles of eyeball (releyed to mesencephalic nucleus of 5^{th} nerve. Nucleus located in midbrain at the level of superior colliculus. Edinger west phal nucleus gives fibres to cilliaris and constrictor papillae. Effects of 3^{rd} nerve palsy : ptosis, mydriasis, mild proptosis, lateral squint, diplopia, loss of accommodation. Supranuclear paralysis of 3^{rd} nerve causes loss of conjugate movement of eye.

28. Weber's syndrome : midbrain lesion with ipsilateral paralysis of 3^{rd} nerve and contralateral hemiplegia.

29. Cilliary ganglion : peripheral parasympathetic ganglion in the course of 3^{rd} nerve. Lies near the apex of orbit between optic nerve and lateral rectus tendon. Motor root from nerve to inferior oblique and sensory root from nasociliary nerve.

30. 6^{th} nerve (abducent) has longest intracranial course. Compressed most commonly by pathologies (tumour, infection etc.)

31. Lacrimal nerve is the smallest and frontal nerve is the largest branch of ophthalmic nerve.

32. Terminal branches of external carotid artery : superficial temporal, maxillary.

33. Infra hyoid muscles of neck : sternohyoid, sternothyroid, thyrohyoid, omohyoid. All are supplied by ansa cervicalis except thyrohyoid which is supplied by C_1 through hypoglossal nerve.

34. Supra hyoid muscles : diagstric, stylohyoid, mylohyoid and geniohyoid. Geniohyoid is supplied by C_1 through 12^{th} nerve. Hyoglossus by 12^{th} nerve.

35. Nerves in carotid triangle : 10, 11, 12 and superior laryngeal branch of 10^{th}.

lowest thyroid or arteria thyroidea ima (present in 3 %) from brachiocephalic trunk or arch of aorta directly.

46. Branches of subclavian artery : vertebral, internal thoracic (mammary), thyrocervical trunk, costocervical trunk, dorsal scapular. Both thyrocervical trunk and internal thoracic arteries arise from 1st part of subclavian artery (former from the front and the latter from behind). Costocervical trunk arises from 2nd part.

47. Internal jugular vein begins as a continuation of sigmoid sinus at the jugular foramen, and ends by joining with subclavian vein to become brachiocephalic vein posterior to sternal end of clavicle. Two brachiocephalic veins join at the level of 1st costal cartilege to become SVC.

48. Glossopharyngial nerve : Nerve of 3rd arch. Motor to stylopharyngius, secretomotor to parotid, gustatory to posterior third of tongue (anterior 2/3rd by chorda tympani of 7th nerve) and sensory to pharynx, tonsil, posterior third of tongue, carotid body and carotid sinus. Important braches – lingual, tympanic.

49. 4 nuclei of vagus : located in medulla. N. of tractus solitarius, N. ambiguous, dorsal nucleus of vagus, N. of spinal tract of trigeminal.

50. Paralysis of vagus nerve produces : nasal regurgitation, nasal twang of voice, hoarseness, cadaveric position of cord, dysphagia.

51. Important branches of vagus : a) recurrent laryngeal : courses in the tracheo – esophageal groove. Supplies all intrinsic muscles of larynx except cricothyroid. b) Superior laryngeal – divides into external and internal laryngeal c) meningeal.

52. Sternocleidomastoid and trapezeus are supplied by spinal accessory (11th) nerve.

53. All muscles of tongue are supplied by hypoglassal nerve except palatoglossus which is supplied by cranial accessory nerve through vagus and pharyngeal plexus.

54. Cervical sympathetic ganglia : total 3. Superior is formed by fusion of upper 4, middle by 5th & 6th and inferior by 7th and 8th. When 1st thoracic ganglia is fused with the inferior cervical ganglia, it is called cervico-thoracic or stellate ganglia.

55. Horner syndrome : enophthalmos, ptosis, miosis, anhydrosis, loss of cilio-spinal reflex. Occurs due to injury / compression to cervical sympathetic trunk.