

Neuroanatomy

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Clinical cases in Neuroanatomy

Case - 1 - spinal cord (prolapsed disc)

- A male patient aged 60 -year -old complains of pain in the back of neck and lateral side of right arm . The abduction of right shoulder is limited .CT scan of cervical spines show herniation of intervertebral disc between C5 &6 on the right side .

Questions :

- 1-What are the parts of the peripheral nerve ?
- 2-Mention the boundaries of intervertebral foramen (IVF) ?
- 3-Enumerate the contents of IVF ?

Answers :

1-The parts of peripheral nerve are :-

a-Two roots: one sensory attached to dorsal horn of spinal cord and motor root attached to ventral horn.

b-Spinal nerve trunk is formed by union of two roots.

c-Two rami : ventral ramus and dorsal ramus which are mixed .

2-The boundaries of intervertebral foramen :anteriorly → IVD and bodies of two successive vertebrae .Posteriorly →superior and inferior articular processes .Superiorly →pedicle of vertebra above .Inferiorly →pedicle of vertebra below .

3-The contents of intervertebral foramen:-spinal nerve trunk , dorsal root ganglion and radicular arteries .

Case - 2 - Pons (Injury of abducent nucleus)

-A 45 -year - old man with a 3 - week history of persistent headache and signs of increased intracranial pressure . CT scan showed a tumour in the floor of 4th ventricle .

Questions :

- 1-Which of the cranial nerve nuclei is most likely to be compressed by this tumor ?
- 2- What is the result of compression of this nucleus?
- 3-What are the other nuclei seen in the floor of 4th ventricle ?

Answers :

- 1- The cranial nerve nucleus which is most likely compressed by this tumor is the abducent nucleus .
- 2-The result of compression of this nucleus is the lateral squint due to paralysis of lateral rectus .
- 3-The other nuclei are seen in the floor of 4th ventricle are vestibular nuclei and hypoglossal nucleus .

Case - 3 - Midbrain (tumour in interpeduncular fossa)

-A female patient aged 57 -year -old was admitted to neurology department with right hemiplegia and features of paralysis of left oculomotor nerve (ptosis , squint and dilated pupil)

Questions :

- 1-What is the site of lesion in this case ?
- 2-Interpret : why is the hemiplegia on the right side ,while the lesion of oculomotor nerve on the left side?
- 3-Mention the arterial supply of the injured part ?
- 4-What are the components of grey matter in this affected part ?

Answers :

- 1-The site of lesion is in the midbrain.

2- The lesion is on the left side of interpeduncular fossa ,which affects the left oculomotor nerve and the left pyramidal tract .The left pyramidal tract supplies the right side of the body producing the right hemiplegia .

3-The arterial supply of the midbrain by the following arteries :-

- a-Mainly by the posterior cerebral artery .
- b- assisted by :-superior cerebellar artery and posterior communicating artery

4-The components of grey matter in this affected part are :-

- a- oculomotor and trochlear nuclei
- b- red nucleus
- c-substantia nigra
- d- pretectal nucleus
- e- superior colliculus
- f-inferior colliculus

Case - 4 -Cerebellum (occlusion of PICA)

-A female patient 60 – year – old was presented to neurological clinic with ataxia . It is associated with acute onset of syncope , hiccup ,vomiting and vertigo . The case is diagnosed as occlusion of posterior inferior cerebellar artery (PICA) by angiography .

Questions :

- 1-Mention the origin of PICA ?
- 2-Mention the structured supplied by this artery ?
- 3-Mention the cranial nerves affected by occlusion of this artery ?

Answers :

- 1- The origin of PICA is from the 4th part of vertebral artery
- 2-The structures supplied by PICA are : -It divides into two terminal branches
 - a-Medial terminal branch supplies the inferior vermis .
 - b-Lateral terminal branch supplies the posterior part of the inferior surface of the cerebellum .

-It also supplies the lateral and dorsal parts of the medulla and gives choroid plexus of the 4th ventricle.

3-The cranial nerves affected by occlusion of this artery are glossopharyngeal, vagus and cranial accessory nerves which is attached to the lateral aspect of medulla oblongata.

Case -5 - Cerebellopontine angle (tumour)

-A male patient aged 40-year-old complains of vertigo, deafness and paralysis of muscles of the face on the right side. CT scan of the brain shows tumour in the cerebellopontine angle.

Questions :

- 1-What are the possible nerves compressed by this tumor?
- 2-What is the name of cerebellar part in this angle?
- 3-Mention the site of this angle?

Answers :

- 1-The possible nerves compressed by this tumor are facial and vestibulocochlear nerves.
- 2-The name of cerebellar part in this angle is the folliculus of folliculonodular lobe.
- 3-The cerebellopontine angle lies between the pons and cerebellum.

Case .6 -Cerebral cortex (Compression of motor area)

-A comatosed male patient aged 20-year-old was admitted to emergency hospital after trauma to the right side of head. CT scan of the head shows extradural haematoma compressing the right motor area.

Questions :

- 1-Mention the exact site of motor area?
- 2-Mention the arterial supply of the motor area?

3-What is the result of compression applied to the right motor area?

Answers :

1-The exact site of motor area :It is found in the precentral gyrus ,in front of the precentral sulcus, on the superolateral surface and extends to medial surface in the anterior part of paracentral lobule.

2-It is supplied by middle cerebral artery on the superolateral surface and anterior cerebral artery on the medial surface.

3-Compression of right motor area leads to left hemiplegia

Case .7 -Cerebral cortex (Ischemia of sensory area)

-A female patient aged 68 –year –old has a history of hypertension . She complains of numbness (decreased sensations) in the right side of face and tongue .

Questions :

1-What is the possible affected gyrus ?

2-Mention its arterial supply ?

3-What are the other gyri in this lobe ?

Answers :

1- The possible affected part is the lower part of left postcentral gyrus.

2-It is supplied by cortical branches of middle cerebral artery on the lateral surface and anterior cerebral artery on the medial surface.

3- The other gyri in parietal lobe are :superior parietal lobule ,inferior parietal lobule and supramarginal gyrus .

Case - 8 - Internal capsule (hemiplegia)

-A comatosed male patient aged 67 year – old was admitted to the emergency hospital with right hemiplegia .CT scan of the brain shows hemorrhage in the left internal capsule.

Questions :

- 1-Mention the exact site of internal capsule?
- 2-Mention the arterial supply of internal capsule?
- 3-Mention the descending fibers passing through the internal capsule?

Answers :

1-The exact site of internal capsule :- It lies medial to the lentiform nucleus and lateral to the head of caudate nucleus and the thalamus

2-The arterial supply of internal capsule :

a-Anterior cerebral artery supplies the anterior part of anterior limb.
 b-Middle cerebral artery supplies the posterior part of anterior limb , genu and posterior limb. One of these arteries is usually the source of hemorrhage of the internal capsule and is called the artery of cerebral hemorrhage.

c-Anterior choroidal artery (branch of internal carotid artery):-It supplies the retrolenticular and sublenticular parts of internal capsule.

d-Posterior communicating artery gives additional branches to the genu.

3-The descending fibers passing through the internal capsule are

a-Corticobulbar fibers b-corticospinal fibers

c-frontopontine fibers , parietopontine fibers ,temporopontine and occipitopontine

d-corticubral fibers

Case - 9 - Ventricular system (Hydrocephalus)

-A 6-month old baby was seen in neurosurgical outpatient clinic with a gradually progressive hydrocephalus. CT scan of the brain suggested a blockage between the 3rd & 4th ventricles.

Questions :

- 1-Mention the name of obstructed structure?
- 2-Mention its exact site?
- 3-What are the structures related to the site of obstruction?

Answers :

- 1-The obstructed structure is the cerebral aqueduct
- 2-The site of cerebral aqueduct :-It passes through the midbrain.
- 3-The cerebral aqueduct divides the midbrain into anterior part is called tegmentum and posterior part is called tectum.

Case -10 -Cerebrum(occlusion of anterior cerebral a.)

-A female patient aged 65-year-old was admitted to emergency hospital with hemiplegia affecting the right lower limb than the upper limb. CT scan shows occlusion of anterior cerebral artery by thrombus.

Questions :

- 1-Mention the course of anterior cerebral artery?
- 2-Mention the cortical areas supplied by this artery?
- 3-Mention the other effects of occlusion of this artery?

Answers :

- 1-The course of anterior cerebral artery :- It passes forward and medially above the optic nerve to reach the median longitudinal fissure.

-Then, it bends forward in the fissure where it becomes joined to its fellow of the opposite side by the anterior communicating artery.

-Then, it curves round the genu of the corpus callosum and continues backward along the upper surface of the corpus callosum in the callosal sulcus. It ends above the splenium of corpus callosum by turning upward in front of the parieto-occipital sulcus

2-The cortical areas supplied by anterior cerebral artery:

a-The medial surface of the hemisphere from the frontal pole to the parieto-occipital sulcus. This area includes the leg area in the paracentral lobule. b-The upper one inch of the superolateral surface as far as the upper end of the parieto-occipital sulcus. c-The medial half of the orbital surface of the frontal lobe.

3-The effects of occlusion of anterior cerebral artery are:

a-Paralysis and loss of sensation of the lower limb.

b-Lesion to septal region may result in prolonged unconsciousness.

c-Lesion to corpus callosum may result in apraxia (inability to perform purposeful movements in spite of intact muscles).

Case - 11 - Cerebrum (occlusion of middle cerebral a.)

-A 70-year-old man was brought to a stroke. CT scan showed a cerebral infarction due to right middle cerebral artery thrombosis.

Questions:

1-Mention the course of this artery?

2-Mention the cortical areas supplied by this artery?

3-What are the possible effects of occlusion of middle cerebral artery?

Answers:

1-The course of middle cerebral artery :- It passes laterally in the stem of lateral sulcus. Then, it turns backward and upward in the posterior ramus of the lateral sulcus crossing over the insula.

-It terminates on the surface of insula by dividing into several branches on the superolateral surface.

2-The cortical areas supplied by middle cerebral artery:-

- a-Most of the superolateral surface of the cerebral hemisphere except :-
Upper one inch of superolateral surface along the superomedial border (which is supplied by anterior cerebral artery) ,lower one inch of superolateral surface along the inferolateral border (which is supplied posterior cerebral artery) and lateral surface of occipital lobe (which is supplied by posterior cerebral artery).
- b-Lateral 1/2 of the orbital surface of the cerebral hemisphere .
- c-The temporal pole and insula .

3-The possible effects of occlusion of middle cerebral artery :hemiplegia and aphasia .

Case .12 .Cerebrum(occlusion of posterior cerebral a.)

-A male patient aged 60- year –old was admitted to eye hospital .He complains of disturbance in the visual field . CT scan of the brain shows occlusion of posterior cerebral artery.

Questions :

- 1-Mention the course of posterior cerebral artery?
- 2-Mention the cortical areas supplied by posterior cerebral artery?
- 3-Mention the possible effects of occlusion of posterior cerebral artery?

Answers :

1-The course of posterior cerebral artery :- It curves laterally and backward around the cerebral peduncle of the midbrain parallel to the superior cerebellar artery . Then , it passes below the splenium of corpus callosum on the medial surface of the cerebral hemisphere . Finally , it enters the calcarine sulcus where it divides into two terminal branches which run in the parieto-occipital sulcus and in the postcalcarine sulcus .

2-The cortical areas supplied by posterior cerebral artery :

- a-Tentorial surface of the cerebral hemisphere except the temporal pole which is supplied by middle cerebral artery .
- b-Lower one inch of the superolateral surface .
- c-The whole occipital lobe

3-The possible effects of occlusion of posterior cerebral artery : hemianopia and disturbance of smell .

Case - 13 -Cerebrum (occlusion of internal carotid a.)

-A male patient aged 70-year-old was admitted to emergency hospital with loss of vision on the left side .It is associated with right hemiplegia ,hemi-anesthesia ,aphasia and apraxia. CT scan of the brain shows occlusion of left internal carotid artery .

Questions :

- 1-Describe the course of cerebral part of internal carotid artery?
- 2-Mention the branches of internal carotid artery?
- 3-Interpret :-Why is the vision lost in occlusion of internal carotid artery ?

Answers :

1- The course of cerebral part of internal carotid artery :- The cerebral part pierces the cavernous sinus on the medial side of the anterior clinoid process. Then ,it turns backward to the region of lateral sulcus .
-It lies lateral to optic chiasma and below the anterior perforating substance . Here ,it divides into anterior and middle cerebral arteries.

2-The branches of internal carotid artery :

a-Ophthalmic artery enters the optic canal to supply the orbit .

b-Posterior communicating artery joins the posterior cerebral artery to establish the circle of Willis .

c-Anterior choroidal artery :-It passes backward along the optic tract around the cerebral peduncle as far as the lateral geniculate body .It ends by entering the inferior horn of lateral ventricle through the lower part of the choroid fissure .

d-Anterior cerebral artery (smaller branch) .

e-Middle cerebral artery (larger branch) .

3-The vision is lost in occlusion of internal carotid artery due to the ophthalmic artery is a branch from internal carotid artery .This ophthalmic artery gives central retinal artery which is the only supply to the retina.

Case - 14 - Cerebrum (great cerebral vein)

-A patient with headache was found to have an aneurysmal dilatation of the great cerebral vein on CT scan.

Questions :

- 1-How is the great cerebral vein formed?
- 2-How is the great cerebral vein terminate?
- 3-What are the other veins of the brain ?

Answers :

- 1-The great cerebral vein is formed by union of right and left internal cerebral veins .
- 2-The great cerebral vein terminates by union with the inferior sagittal sinus to form straight sinus.
- 3-The other veins of the brain are basal vein , internal cerebral vein , anterior cerebral vein , superficial & deep middle cerebral veins, inferior cerebral veins and superior cerebral veins .

Case - 15 - Meninges (subarachnoid hemorrhage)

- A female patient aged 60- year – old was admitted to hospital with sudden severe headache .It is associated with stiffness of the neck and pain in back and limbs. On examination , there is papilledema. The lumbar puncture showed bloody CSF. The case is diagnosed as subarachnoid hemorrhage .

Questions :

- 1-Mention the contents of subarachnoid space?
- 2-Mention the sources of C.S.F.?
- 3-How does the CSF drain ?
- 4-Interpret :-Why the pain is felt in the back and limbs?

Answers :

1-The contents of subarachnoid space are CSF, cranial nerves and blood vessels of the brain .

2-The sources of CSF : a-The main bulk of the C.S.F. is formed by the choroid plexuses present in the medial wall of the lateral ventricles and the lesser amount by the choroid plexuses in the roof of the 3rd ventricles & 4th ventricle

b-It is secreted by the ependyma covering the chroid plexuses and walls of the ventricles.

c-Possibly, it is also secreted by the capillaries on the surface of the brain and spinal cord .

3-The CSF draining : -The C.S.F. is absorbed by arachnoid villi and granulations which absorb the C.S.F. from the subarachnoid space and pours it into the dural venous sinuses particularly the superior sagittal sinus to reach the blood stream .

4-Due to irritation of spinal sensory roots .

M.C.QS OF NEUROANATOMY**Introduction**

1-The brain stem consists of :

- a-Medulla oblongata , pons and cerebellum
- b-Medulla oblongata , midbrain and cerebellum
- c-Midbrain , pons and cerebellum
- d-Midbrain , pons and medulla oblongata
- e-Pons ,medulla oblongata

2-The ganglion is :

- a-Collection of nerve fibers inside CNS
- b-Collection of nerve fibers outside CNS
- c- Collection of nerve cells outside CNS
- c- Collection of nerve cells inside CNS
- d-Collection of nerve cells inside PNS

3-The nucleus is :

- a-Collection of nerve fibers inside CNS
- b-Collection of nerve fibers outside CNS
- c- Collection of nerve cells outside CNS
- d- Collection of nerve cells inside CNS
- e-Collection of nerve cells inside PNS

4-Concerning the dendrites ,all are true except:

- a-Are cytoplasmic processes
- b-Arise from cell body
- c-Are short
- d-Are numerous
- e-Conduct the impulses away from the cell body

5-As regard the axon ,all are true except one :

- a-Is cytoplasmic process
- b-Arises from cell body
- c-Is a long
- d-Is numerous
- e-Conduct the impulse away from the cell body

Spinal cord

6-In adult ,the lower end of spinal cord reaches the level of :

- a-Lower border of T12
- b-Lower border of L1
- c- Lower border of L2
- d- Lower border of L3
- e- Lower border of L4

7-The deepest longitudinal groove of the spinal cord is :

- a-Anterior median fissure
- b-Posterior median sulcus
- c-Anterolateral sulci
- d-Posterolateral sulci
- e-None of the above

8-At the age of 3 months after birth ,the spinal cord ends opposite :

- a-Lower border of 1st lumbar vertebra
- b-Lower border of 2nd lumbar vertebra
- c-Lower border of 3rd lumbar vertebra
- d-Lower border of 4th lumbar vertebra
- e-Lower border of 5th lumbar vertebra

9-Concerning the spinal nerves ,one statement is wrong :

- a-They are 31 pairs
- b-Attached to the side of spinal cord by two roots
- c-The dorsal root ganglion is attached to the posterior root
- d-The two roots join with each other before the dorsal root ganglion
- e-The trunk of spinal nerve divides into two rami

10-As regard the spinal dura matter ,all are true except one :

- a- It extends from the foramen magnum to the 2nd sacral vertebra
- b-It is attached to the posterior longitudinal ligament
- c-It separated from the walls of vertebral canal by epidural space
- d-It is separated from arachnoid matter by subdural space
- e-The subdural space contains C.S.F.

11-As regard the subarachnoid space of the spinal cord ,all are correct except one :

- a-It contains C.S.F.
- b-Spinal blood vessels pass through it
- c-Roots of spinal nerves crosses it
- d-Ligamenta denticulate transverse it
- e-It is a narrow space in the lower part of vertebral canal

12-The spinal pia matter gives the following fibrous bands except :

- a-Ligamenta denticulata
- b-Membrana tectoria
- c-Linea splendens
- d-Subarachenoid septum
- e-Filum terminale

13-As regard the ligament denticulata ,one statement is wrong :

- a- They are two longitudinal bands
- b-They are derived from arachenoid matter
- c-Its lateral border shows 21 teeth like projections
- d-Its tooth like projections pierce the arachenoid matter
- e-They are attached to the dura matter

14-Concerning the anterior spinal artery ,all are correct except one :

- a-It arises from the 4th part of vertebral artery
- b-It starts within the cranial cavity
- c-It descends along the anterior median fissure
- d-It supplies the anterior 1/3 of cross section of the cord
- e-It anastomoses with the radicular arteries

15-Concerning the posterior spinal artery ,all are true except one :

- a- It arises from the 4th part of vertebral artery
- b-It starts within the cranial cavity
- c-It divides into two branches
- d-The two branches are related to the ventral roots of spinal nerves
- e-It supplies the posterior 1/3 of cross sectioned of spinal cord

16-Concerning the ventral horn of spinal cord ,all are true except:

- a-It contains cell bodies of motor neurons
- b-Its motor neurons divide into 3 groups
- c-The medial group innervate the muscles of trunk
- d-The lateral group innervate muscles of limbs
- e-The central group the muscles of head and neck

17- The dorsal horn of spinal cord contains the following nuclei except:

- a-Autonomic nuclei
- b-Posteromarginal nucleus
- c-Substantia gelatinosa of Rolandi
- d-Nucleus proprius
- e-Clarke's nucleus

18-Concerning the gracile tract ,one statement is wrong :

- a-It is responsible for proprioceptive sensation
- b-Carries the proprioceptive sensation from the opposite side of body
- c- It starts from below T6
- d-Its cell bodies lie in the dorsal root ganglion
- e-It is the central processes of 1st order neurons

19-Concerning the cuneate tract ,all are true except :

- a-It is responsible for proprioceptive sensation
- b-It starts from above T6 segment
- c-It is represented by 2nd order neurons
- d-Its cell bodies lie in the dorsal root ganglion
- e-It ends in cuneate nucleus in medulla oblongata

20-Renshaw cells lie in which lamina of the spinal cord :

- a-Lamina VI
- b-Lamina VII
- c-Lamina VIII
- d-Lamina IX
- e-Lamina X

Medulla Oblongata

21-As regard the medulla oblongata ,all are true except one:

- a-Its anterior median fissure contains motor decussation
- b-Roots of hypoglossal nerve lies medial to pyramid
- c-Abducent nerve lies at the base of pyramid
- d-The olive lies lateral to pyramid
- e-Upper 1/2-of medulla oblongata forms part of floor of 4th ventricle

22-Concerning the olive ,all are true except one:

- a-It lies lateral to pyramid
- b-It belong to the closed medulla
- c-It is separated from inferior cerebellar peduncle by posterolateral sulcus
- d-The roots of cranial nerves 9,10,11 lie behind it
- e-Its nucleus is one of extrapyramidal centers.

23-The medulla oblongata includes all of the following structures except :

- a-Cuneate tubercle
- b-Olive
- c-Vagal trigone
- d-Facial colliculus
- e-Glossopharyngeal nerve

24-Concerning the pyramid, all are true except one :

- a-It is separated from the opposite pyramid by anterior median fissure
- b-It is related laterally to roots of hypoglossal nerve
- c-It is separated from the olive by postero-lateral sulcus
- d-It is formed by corticospinal fibers
- e-The pyramidal decussation occurs in anterior median fissure

25-The following are features of back of medulla oblongata except:

- a-Gracile tubercle and tract
- b-Cuneate tubercle and tract
- c-Posterior median sulcus
- d-Inferior cerebellar peduncle
- e-Open medulla forms part of floor of 4th ventricle

26-The lateral medullary syndrome (Wallenberg's syndrome) results in occlusion of :

- a-Anterior cerebral artery
- b-Anterior spinal artery
- c-Medullary branches of vertebral artery
- d-PICA
- e-Posterior meningeal artery

Pons

27-Concerning the pons ,all are true except one :

- a-It is related anteriorly to basilar artery
- b-The trigeminal nerve lies at the junction between basilar part of pons and middle cerebellar peduncle
- c-Its tegmental part contains facial colliculus
- d-The facial colliculus is produced by facial nucleus
- e-It contains decussation of hearing fibers

28-The pons has the following structures except :

- a-Facial colliculus
- b-Inferior colliculus
- c-Vestibular elevation
- d-Trapezoid body
- e-Basilar sulcus

29-The pons contains the following cranial nerve nuclei except:

- a-Trochlear nerve
- b-Trigeminal nerve
- c-Abducent nerve
- d-Facial nerve
- e-Auditory nerve

Midbrain

30-The crus cerebri is crossed by the following structures except :

- a-Optic tract
- b-Basal vein
- c-Oculomotor nerve

- d-Posterior cerebral artery
- e-Superior cerebellar artery

31-The dorsal aspect of midbrain shows the following structures except :

- a-Exit of trochlear nerve
- b-Frenulum veli
- c-Superior cerebellar peduncles
- d-Superior medullary velum
- e-Inferior medullary velum

32-Concerning the substantia nigra ,all are true except :

- a-It is a black lamina of grey matter.
- b-It contains melanin pigment
- c-It is situated in the tectum of midbrain
- d-It is an extrapyramidal center
- e-It is connected with corpus striatum

33-The crus cerebri contains :

- a- Pyramidal tract
- b-Corticopontine fibers
- c-Corticostriate fibers
- d-All of the above
- e-a + b only

34-The cerebral peduncle consists of :

- a-Crus cerebri
- b-Substantia nigra
- c-Tegmentum
- d-All of the above
- e-a + b only

35-The midbrain is divided into ventral and dorsal parts by :

- a- cerebral peduncle
- b-Crus cerebri
- c-Cerebral aqueduct
- d-Substantia nigra
- a-Superior medullary velum

36-The midbrain is supplied by :

- a-Posterior cerebral artery
- b-Superior cerebellar artery
- c-Middle cerebral artery
- d-All of the above
- e-a + b only

37-Concerning the superior colliculus ,all are true except one:

- a- It lies in the back of midbrain
- b-It belongs to the tectum of midbrain
- c-It lies below the pineal body
- d-It is a reflex center for vision
- e-It is connected with the medial geniculate body

38-Concerning the inferior colliculus ,all are false except one :

- a-It is a part of tegmentum of midbrain
- b-It lies just below the pineal body
- c-It lies in front of cerebral aqueduct
- d-It is a reflex center for vision
- e-It is connected with the medial geniculate body

Cerebellum

39-Concerning the cerebellum ,all are true except one:

- a-It lies under cover of tentorium cerebelli
- b-The two cerebellar hemisphere joined together by vermis
- c-The anterior notch lodges the back of midbrain
- d-The posterior notch lodges the falx cerebelli
- e-The superior surface shows V-shaped fissure

40-As regard the vermis of cerebellum ,all are false except one :

- a-The most anterior part of superior vermis is a nodule
- b-The most anterior part of inferior vermis is the lingula
- c-The nodule is separated from uvula by posterolateral fissure
- d-The uvula is separated from the pyramid by primary fissure
- e-The tuber vermis belongs to superior vermis

41- Concerning the fissures of cerebellum, all are true except :

- a- The fissure prima is present on the superior surface
- b- The fissure prima divides the superior surface into anterior 1/3 and posterior 2/3
- c- The fissure secunda extends laterally as retrotonsillar fissure
- d- The posterolateral fissure extends laterally behind the folliculus
- e- The horizontal fissure divides the cerebellum into superior and inferior surfaces

42- The followings are parts of inferior vermis except :

- a- Lingula
- b- Nodule
- c- Uvula
- d- Pyramid
- e- Tuber vermis

43- Which of the following parts belong to superior vermis :

- a- Lingula
- b- Nodule
- c- Uvula
- d- Pyramid
- e- Tuber vermis

44- Concerning the arrangement of parts of inferior vermis from forward to backward

- a- Nodule, pyramid, uvula and tuber vermis
- b- Nodule, uvula, pyramid and tuber vermis
- c- Pyramid, nodule, uvula and tuber vermis
- d- Pyramid, uvula, nodule and tuber vermis
- e- Uvula, nodule, pyramid and tuber vermis

45- As regard the folliculonodular lobe, all are true except :

- a- It consists of nodule and two folliculi
- b- The nodule is connected with the folliculus by a peduncle
- c- It is separated from the middle lobe by fissure prima
- d- It is connected mainly with vestibular nuclei
- e- It is responsible for equilibrium

46-Concerning the anterior lobe of cerebellum ,one statement is wrong :

- a-It forms most of the superior surface of cerebellum
- b-It is separated from the middle lobe by horizontal fissure
- c-It is connected mainly with the spinal cord
- d-The inferior cerebellar peduncle connects between the anterior lobe and spinal cord
- e-It is responsible for coordination of muscles

47-Concerning the middle lobe of cerebellum ,one statement is wrong :

- a-It forms a part of superior surface
- b-It forms most of inferior surface
- c-It separated from the anterior lobe by fissure secunda
- d-It is connected with the cerebral cortex
- e-The corticopontocerebellar fibers end in the middle lobe

48-Which of the following cerebellar peduncles contains only afferent fibers to cerebellum :

- a- Superior cerebellar peduncle
- b-Middle cerebellar peduncle
- c-Inferior cerebellar peduncle
- d-All of the above
- e-a + b only

49-Concerning the superior cerebellar peduncle ,one statement is wrong :

- a-It is the smallest peduncle
- b-It is the most lateral of three peduncle
- c-It connects the cerebellum with the midbrain
- d-It is mainly efferent fibers
- e-It decussates in the midbrain

50-Concerning the middle cerebellar peduncle ,one statement is wrong :

- a-It is the thickest peduncle
- b-It is the most lateral of three peduncles
- c-It consists only of efferent fibers
- d-It connects the pons with the cerebellum
- e-It arises from pontine nuclei

51-As regard the inferior cerebellar peduncle ,all are true except one :

- a-It begins at the middle of medulla oblongata
- b-It curves backward to enter the cerebellum
- c-It lies between the middle and superior cerebellar peduncles
- d-Most of its fibers are efferent
- e-It connects the cerebellum with the spinal cord and medulla oblongata

52-Inferior cerebellar peduncle include all the following fibers except :

- a-Tectocerebellar
- b-Vestibulocerebellar
- c-Posterior spinocerebellar
- d-Olivocerebellar
- e-Cuneocerebellar

53-The cerebellum contains the following nuclei except :

- a-Dentate nucleus
- b-Fastigial nucleus
- c-Emboliform nucleus
- d-Globose nucleus
- e-Inferior olivary nucleus

4th ventricle

54-The foramina of the 4th ventricle are :

- a-Foramen of Magendie
- b-Foramen of Luschka
- c-Foramen of Monro
- d-All of the above
- e- a + b only

55-The upper part of the roof of 4th ventricle is formed by :

- a-Two superior cerebellar peduncle
- b-Superior medullary velum
- c-Lingula of superior vermis
- d-All of the above
- e-a + b only

56-The lower part of the roof of the 4th ventricle is formed by :

- a-Ependyma
- b-Inferior medullary velum
- c-Tela choroida
- d-All of the above
- e-a + b only

57-The followings are features of the floor of 4th ventricle except :

- a-Facial colliculus
- b-Vestibular area
- c-Hypoglossal trigone
- d-Steria terminalis
- e-Steria medullaris

58-The 4th ventricle communicates with :

- a-3rd ventricle
- b-Central canal
- c-Cisterna magna
- d-Pontine cistern
- e-All of the above

59-Concerning the foramen of Magendie ,all are false except one :

- a-It connects the lateral ventricle with the 3rd ventricle
- b-It connects the 3rd ventricle with the 4th ventricle
- c-It is a large gap in lower part of floor of 4th ventricle
- d-It communicates with the cisterna magna
- e-It transmits C.S.F. from 4th ventricle to central canal

60-The choroid plexus of 4th ventricle :

- a-It is arachnoid matter containing plexus of arteries
- b-It is supplied by anterior inferior cerebellar artery
- c-It lies in the upper part of roof of 4th ventricle
- d-It lies in midline of floor of 4th ventricle
- e-The two plexuses together form a T-shaped arrangement

61-The tela choroida of 4th ventricle is supplied by :

- a-Anterior inferior cerebellar artery
- b-Posterior inferior cerebellar artery
- c-Superior cerebellar artery
- d-Anterior choroidal artery
- e-Posterior choroidal artery

62-The foramen of Luschka opens into :

- a-Central canal
- b-3rd ventricle
- c-Pontine cistern
- d-Cisterna magna
- e-Interpeduncular cistern

Diencephalon

63-The upper surface of thalamus is related to the following structures except :

- a-Body of caudate
- b-Steria terminalis
- c-Steria medullaris thalami
- d-Thalamostriate vein
- e-Body of fornix

64-The inferior surface of thalamus is related to :

- a-Hypothalamus
- b-Subthalamus
- c-Epithalamus
- d-All of the above
- e-a + b only

65-The medial surface of thalamus is related to :

- a- Body of fornix
- b-Choroid fissure
- c-3rd ventricle
- d-Body of caudate
- e-Posterior limb of internal capsule

66-The lateral surface of thalamus is related to :

- a-Anterior limb of internal capsule
- b-Genu of internal capsule
- c-Posterior limb of internal capsule
- d-Retrolenticular part of internal capsule
- e-Sublenticular part of internal capsule

67-Concerning the connection of thalamus ,all are true except :

- a-Its anterior part is connected with cingulate gyrus
- b-Its medial part is connected with hypothalamus
- c-Its anterior ventral nucleus is extrapyramidal center
- d-Its intermediate ventral nucleus is connected with the brain stem
- e-Its posterior ventral nucleus receive all general sensations from the opposite side of body

68-The epithalamus consists of the followings except :

- a-Pineal body
- b-Habenular nucleus
- c-Habenular commissure
- d-Medullary stria
- e-Posterior commissure

69-Concerning the pineal body ,all are true except one :

- a-It is a piriform body
- b-It lies above the superior colliculus
- c-It lies below the splenium of corpus callosum
- d-It is attached to the back of thalamus
- e-It regulates the activities of endocrine glands

70-The habenular nucleus :

- a-It lies below the pineal body
- b-It is situated on the lateral surface of pulvinar
- c-It is the reflex center for olfaction
- d-It receives fibers from lateral geniculate body
- e-It is connected with medullary stria

71-The posterior commissure connects the following nuclei of both sides :

- a-Dorsal nucleus of posterior commissure
- b-Interstitial nucleus of Cajal
- c-Habenular nucleus
- d-All of the above
- e-a +b only

72-Concerning the subthalamus ,all are true except one :

- a-It lies below the thalamus
- b-It lies above the tectum of midbrain
- c-It is related medially to the hypothalamus
- d-It is related laterally to posterior limb of internal capsule
- e-It is one of extrapyramidal center

73-The hypothalamus is limited anteriorly by :

- a-Optic chiasma
- b-Lamina terminalis
- c-Anterior commissure
- d-All of the above
- e-a + b only

74-The hypothalamus is connected with the followings except :

- a-Pituitary gland
- b-Cerebral cortex
- c-Thalamus & corpus striatum
- d-Cerebellum
- e-Brain stem & spinal cord

75-The hypothalamus is separated from the thalamus by :

- a-Subthalamus
- b-Hypothalamic sulcus
- c-Epithalamus
- d-Metathalamus
- e-Transverse cerebral fissure

86-The roof of 3rd ventricle is formed by :

- a-Ependyma
- b-Tela choroida
- c-Two internal cerebral veins
- d-All of the above
- e- a + b only

87-The following structures form the floor of 3rd ventricle except :

- a-Optic chiasma
- b-Tuber cinerum
- c-Two mammillary bodies
- d-Anterior perforating substance
- e-Posterior perforating substance

88-The followings are recesses of 3rd ventricle except :

- a-Hypothalamic recess
- b-Infundibular recess
- c-Pineal recess
- d-Suprapineal recess
- e-Optic recess

Interpeduncular fossa

89-The following structures share in boundaries of interpeduncular fossa except:

- a-Optic chiasma
- b-Optic tract
- c-Upper border of pons
- d-Cerebral peduncle
- e-Posterior perforating substance

90-Concerning the mammillary bodies ,all are true except :

- a-They are a rounded swelling of grey matter
- b-They lie behind the tuber cinerum
- c-They receives fibers of crura of fornix
- d-They send efferent fibers to the thalamus
- e-They are responsible for visceral sensations

91-Which of the following structures lies above the anterior perforating substance:

- a-Olfactory trigon
- b-Uncus of temporal lobe
- c-Stem of lateral sulcus
- d-Anterior commissure
- e-Optic chiasma

92-One of the following arteries does not share in formation of Circle of Willis :

- a-Middle cerebral artery
- b-Anterior cerebral artery
- c-Posterior cerebral artery
- d-Internal carotid artery
- e-Posterior communicating artery

Cerebrum

93-Concerning the central sulcus ,all are true except one :

- a-It lies on the superolateral surface
- b-It starts a little behind the midpoint of superomedial border
- c-It communicates below with the posterior ramus of lateral sulcus
- d-Its upper end extends a little on the medial surface
- e-It separates the frontal lobe from parietal lobe

94-As regard the lateral sulcus ,one statement is wrong :

- a-It starts on the inferior surface
- b-It consists of stem and 3 rami
- c-The stem begins at the posterior perforating substance
- d-The posterior ramus runs backward on the lateral surface
- e-The lateral sulcus contains middle cerebral artery

95-Concerning the parieto-occipital sulcus ,all are true except one :

- a-It lies mainly on the medial surface
- b-It cuts the supero-medial border ,5 cm in front of occipital pole
- c-It joins with the pre-occipital notch by imaginary line
- d-It contains branch from the middle cerebral artery
- e-It separates the parietal lobe from occipital lobe

96-The followings are sulci in the frontal lobe except :

- a-Precentral sulcus
- b-Posterior ramus of lateral sulcus
- c-Anterior ramus of lateral sulcus
- d-Superior frontal sulcus
- e-Inferior frontal sulcus

97-The followings are gyri in the frontal lobe except :

- a-Precentral gyrus
- b-Postcentral gyrus
- c-Superior frontal gyrus
- d-Middle frontal gyrus
- e-Inferior frontal gyrus

98-Which of the following fissures and sulci separates the precentral from postcentral gyrus :

- a-Fissure of Rolando
- b-Calcarine sulcus
- c-Parieto-occipital sulcus
- d-Transverse cerebral fissure
- e-Longitudinal cerebral fissure

99-The followings are important areas in the frontal lobe except :

- a-Motor area
- b-Premotor area
- c-Motor speech area
- d-Sensory speech area
- e-Frontal eye field

100-Concerning the motor area ,all are true except :

- a-It lies in the precentral gyrus
- b-It extends to occupy the anterior part of paracentral lobule
- c-It is completely supplied by middle cerebral artery
- d-The body is represented upside -down in this area
- e-It gives origin to the pyramidal tract

101-Concerning the motor speech area ,all are true except one :

- a-It is the areas 44 &45
- b-It lies in the posterior part of middle frontal gyrus
- c-It is presented on the left side only in right handed people
- d-It is supplied by the middle cerebral artery
- e-Injury to this area results in aphasia

102-Broca's speech area is :

- a-Area 44 &45
- b-Area 4
- c-Area 3,1,2
- d-Area 6
- e-Area 42

103-The areas 9 ,10 , 11 occupy:

- a-Anterior part of superior frontal gyrus
- b-Anterior part of middle frontal gyrus
- c-Anterior part of inferior frontal gyrus
- d-All of the above
- e- a + b only

104-The emotional disturbance results from injury of :

- a-Motor area
- b-Premotor area
- c-Prefrontal areas
- d-Broca's area
- e-None of the above

105-Injury of frontal lobe of left cerebral hemisphere leads to all the following except :

- a-Left side hemiplegia
- b-Expressive aphasia
- c-Personality changes
- d-Increased tendon jerks
- e-Change in behavior

106-All of the following statements concerning the primary motor cortex are correct except one :

- a-It is formed in the precentral gyrus and paracentral lobule
- b-It is located in the frontal lobe
- c-It contains the giant cells of Betz
- d-It corresponds to area 4
- e-Injury results in a permanent flaccid paralysis

107-Concerning the frontal eye field ,all are true except :

- a-It lies in front of premotor area
- b-It is the area 8
- c-It occupies the posterior part of inferior frontal gyrus
- d-It is the pyramidal motor area for eye
- e-It controls the movements of eye

108-Which of the followings areas is extrapyramidal center :

- a-Motor area
- b-Premotor area
- c-Frontal eye field
- d-Broca's area
- e-Prefrontal area

109-All of the following statements concerning the parietal lobe are correct except :

- a-Contains the primary sensory area
- b-Contains the angular gyrus
- c-Contains the supramarginal gyrus
- d-Contains the visual radiation
- e-Contains Wernicke's speech area

110-The supramarginal gyrus is :

- a-Arched gyrus around the central sulcus
- b-Arched gyrus around the posterior ramus of lateral sulcus
- c-Arched gyrus around the superior temporal gyrus
- d-Arched gyrus around the inferior temporal gyrus
- e-Arched gyrus around the calcarine sulcus

111- The main sensory area occupies:

- a-Postcentral gyrus
- b-Paracentral lobule
- c-Superior parietal lobule
- d-All of the above
- e-a +b only

112-Concerning the main sensory area ,all are true except:

- a-It is the area 3 ,1,2
- b-It occupies the Postcentral gyrus
- c-It extends to the posterior part of Paracentral lobule
- d-It receives pain ,temperature ,touch ,pressure and taste sensations from the opposite 1/2 of the body
- e-It is supplied by the middle cerebral artery only

113-The sensory speech area occupies :

- a-The supramarginal gyrus
- b-The angular gyrus
- c-Inferior parietal lobule
- d-All of the above
- e- a + b only

114-Concerning the sensory association area ,all are true except one:

- a-It is the areas 5 &7
- b-It occupies the superior parietal lobule
- c-It stores the memory of written and printed words
- d-It is responsible for knowing the meaning of the sensation

115-The parietal lobe contains the following sulci except :

- a-Postcentral sulcus
- b-Intraparietal sulcus
- c-Posterior ramus of lateral sulcus
- d-Superior temporal sulcus
- e-Middle temporal sulcus

116-As regard the auditory area ,one statement is wrong :

- a-It is the areas 41&42
- b-It lies in the middle part of superior temporal gyrus
- c-It receives auditory radiation from medial geniculate body
- d-Unilateral complete lesion of this area results in complete deafness
- e-It is supplied by middle cerebral artery

117-Concerning the primary visual area ,all are true except one :

- a-It is the area 18 &19
- b-It is mainly found in the medial surface of occipital lobe
- c-It is limited on the lateral surface by lunate sulcus
- d-It is supplied by posterior cerebral artery
- e-Injury of this area leads to contralateral homonymous hemianopia

118-The visual area lies :

- a-Below the calcarine sulcus
- b-Below the postcalcarine sulcus
- c-Above the postcalcarine sulcus
- d-All of the above
- e-a + b only

119-Concerning the insula ,all are true except one :

- a-It is the hidden cortex in the bottom of lateral sulcus
- b-It has 3-4 short gyri and one long gyrus
- c-Its surface is crossed by anterior cerebral artery
- d-It lies lateral to claustrum
- e-It contains area 43

120-The insular cortex :

- a-Receives taste impulses from the thalamus
- b-Contains gustatory area
- c-Controls the visceral activities
- d-All of the above
- e-a + b only

121-As regard the uncus ,all are true except one :

- a-It is the anterior end of parahippocampal gyrus
- b-It is bounded laterally by rhinal sulcus
- c-It is the center for olfaction
- d-It lies lateral to posterior perforating substance
- e-It covers the amygdaloid nucleus

122-The limbic lobe includes the following structures except :

- a-Cingulate gyrus
- b-Paraterminal gyrus
- c-Parahippocampal gyrus
- d-Dentate gyrus
- e-Lingual gyrus

123-Concerning the parahippocampal gyrus ,all are true except one :

- a-It lies on the medial side of anterior part of collateral sulcus
- b-It begins just below the splenium of corpus callosum
- c-It is continuous posteriorly as angular gyrus
- d-It is continuous deeply with hippocampus
- e-Its anterior part is a part of olfactory center

124-As regard the lingual gyrus, one statement is wrong :

- a-It is continuous anteriorly as parahippocampal gyrus
- b- It lies between the collateral sulcus and calcarine & postcalcarine sulci
- c-It begins opposite the splenium of corpus callosum - .
- d-It is supplied by anterior cerebral artery
- e-It contains the cortical area for vision

125-Concerning the collateral sulcus ,all are true except one :

- a-It begins at the posterior end of rhinal sulcus
- b-It forms elevation in posterior horn of lateral ventricle
- c-It is separated from calcarine sulcus by lingual gyrus
- d-It is separated from occipitotemporal sulcus by medial occipitotemporal gyrus
- e-It extends posteriorly to occipital pole

126-Concerning the calcarine sulcus ,all are true except one :

- a-It begins on the tentorial surface below the splenium
- b-It is continuous on the medial surface of occipital lobe
- c-It joins the parieto-occipital sulcus
- d-It makes a bulge in the inferior horn of lateral ventricle
- e-It contains posterior cerebral artery

127-The Paracentral lobule :

- a- Lies behind the ascending ramus of cingulate sulcus
- b-Is continuous with precentral and postcentral gyrus
- c-Contains motor and sensory areas of lower limb
- d-All of the above
- e-None of the above

128-Which gyrus lies between parieto-occipital sulcus and postcalcarine sulcus

- a-Precuneus
- b-Cuneus
- c-Lingual gyrus
- d-Angular gyrus
- e-Supramarginal gyrus

129-The rhinencephalon includes the followings except :

- a-Olfactory bulb and tract
- b-Anterior perforating substance
- c-Uncus
- d-Cingulate gyrus
- e-Amygdaloid body

130-The hippocampal formation includes :

- a-Hippocampus
- b-Dentate gyrus
- c-Indosium griseum
- d-All of the above
- e- a +b only

131-The piriform area includes :

- a-Uncus
- b-Anterior part of parahippocampal gyrus
- c-Paraterminal gyrus
- d-All of the above
- e- a + b only

132-The limbic lobe includes the followings except :

- a-Paraterminal gyrus
- b-Cingulate gyrus
- c-Isthmus
- d-Parahippocampal gyrus
- e-Amygdaloid body

133-Which of the followings of limbic system is non- olfactory :

- a-Paraterminal gyrus
- b-Habenular nuclei
- c-Amygdaloid body
- d-Cingulate gyrus
- e-Anterior perforating substance

134-Which of the following sulci is the continuation of the callosal sulcus:

- a-Cingulate sulcus
- b-Hippocampal sulcus
- c-Calcarine sulcus
- d-Collateral sulcus
- e-Parieto-occipital sulcus

Internal structure of cerebrum(white matter)

135-The association fibers :

- a-Connect the different cortical areas in the same hemisphere
- b-Connect the cortex of one hemisphere with the same cortex of the opposite hemisphere
- c-Connect the cortex of one hemisphere with the lower centers
- d-All of the above
- e-a + b only

136-The commissural fibers :

- a-Connect the cortex of one hemisphere with the same cortex of the opposite hemisphere
- b-They cross the median plane
- c-They pass through the internal capsule
- d-All of the above
- e-a + b only

137-The projecting fibers :

- a-Connect the cortex of one hemisphere with the lower centers
- b-They pass through the internal capsule
- c-They cross the median plane
- d-All of the above
- e- a + b only

138-The long association fibers include the followings except :

- a-Superior longitudinal bundle
- b-Inferior longitudinal bundle
- c-Corpus callosum
- d-Cingulum
- e-Uncinate bundle

139-Which of the association fibers start in the frontal lobe to reach the occipital and temporal lobes :

- a- Inferior longitudinal bundle
- b-Superior longitudinal bundle
- c-Cingulum
- d-Uncinate bundle
- e-None of the above

140-The Cingulum :

- a-Connects the cingulate gyrus with the hippocampus
- b-Connects the anterior perforating substance with uncus
- c-Runs within the cingulate gyrus
- d-All of the above
- e- a + b only

141-Which of the association fibers start in the orbital gyri and end in anterior part of temporal lobe :

- a-Superior longitudinal bundle
- b-Inferior longitudinal bundle
- c-Cingulum
- d-Uncinate bundle
- e-Corpus callosum

142-Concerning the corpus callosum ,all are true except :

- a-It is the largest association fibres
- b-Its fibers cross the median plane
- c-It connects nearly all the symmetrical areas of the 2 hemispheres
- d-It lies at the bottom of the median longitudinal fissure
- e-Its inferior surface is attached to the fornix by septum pellucidum

143-Concerning the rostrum of corpus callosum ,all are true except :

- a-It is the downward tapering part of corpus callosum
- b-It is connected to the optic chiasma by septum pellucidum
- c-It forms the floor of anterior horn of lateral ventricle
- d-It connects the orbital surfaces of two frontal lobes with each other
- e-It is supplied by anterior cerebral artery

144-As regard the genu of corpus callosum ,one statement is wrong :

- a-It is the most anterior part of corpus callosum
- b-It forms the anterior wall of anterior horn of lateral ventricle
- c-Its fibers form forceps major
- d-It connects the two frontal lobes together
- e-It is supplied by anterior cerebral artery

145-Concerning the trunk of corpus callosum ,one statement is wrong :

- a-It is the main part of corpus callosum
- b-Its lower surface is attached in the median plane to the septum pellucidum
- c-It forms the roof of anterior horn and central part of corpus callosum
- d-Its fibers connect the different areas of parietal lobe of both sides together
- e-It is separated from the cingulate gyrus by cingulate sulcus

146- Concerning the splenium of corpus callosum ,all are true except one :

- a-It is the rounded posterior end of corpus callosum
- b-It overlies the pineal body
- c-Most of its fibers forms the forceps minor
- d-Some of its fibers is called tapetum
- e-The tapetum forms the roof and lateral wall of posterior horn of lateral ventricle

147-Forceps major is formed by which part of corpus callosum :

- a-Rostrum
- b-Genu
- c-Body
- d-Splenium
- e-Tapetum

148-Concerning the anterior commissure ,all are true except one :

- a-It is embedded in the lamina terminalis
- b-It lies just in front of anterior column of fornix
- c-It shares in the floor of 3rd ventricle
- d-It connects the anterior and inferior parts of temporal lobes
- e-It connects the olfactory structures of both sides together

149-The anterior commissure connects the following structures with each other except :

- a-Olfactory bulbs
- b-Anterior perforating substance
- c-Posterior perforating substance
- d-Piriform areas
- e-Amygdaloid bodies

150-Which of the following fibers is a commissure of midbrain :

- a-Corpus callosum
- b-Anterior commissure
- c-Posterior commissure
- d-Habinnular commissure
- e-Fornix

151-The fornix connects hippocampus to :

- a-Motor area
- b-Premotor area
- c-Prefrontal cortex
- d-Hypothalamus
- e-Thalamus

152-Concerning the fornix ,all are true except one :

- a-It is the hippocampal commissure
- b-It is the afferent pathway of hippocampus
- c-It is formed by the axons of hippocampus
- d-It is formed of crus ,body and column
- e-It ends in mammillary bodies

153-As regard the body of fornix ,one statement is wrong :

- a-It is formed by fusion of two crura
- b-The hippocampal commissure connects the bodies of fornices with each other
- c-Its upper surface is connected to under surface of trunk of corpus callosum by lamina terminalis
- d-It lies in the floor of central part of corpus callosum
- e-It rests on the ependymal roof of 3rd ventricle

154-Concerning the anterior column of fornix ,one statement is wrong :

- a-It descends in front of interventricular foramen
- b-It lies behind the anterior commissure
- c-It ends in anterior nucleus of thalamus
- d-Stria medullaris thalami arises from it

155-The superior thalamic radiation arises from :

- a-Anterior nucleus of thalamus
- b-Medial nucleus of thalamus
- c-Posterior ventral nucleus of thalamus
- d-All of the above
- e-a + b only

156-The posterior thalamic radiation arises from :

- a-Lateral geniculate body
- b-Medial geniculate body
- c-Posterior ventral nucleus of thalamus
- d-All of the above
- e-a + b only

157-Concerning the internal capsule ,all statements are true except one :

- a-It is made of projection fibers
- b-It is called porta cerebri
- c-It lies between thalamus ,caudate nucleus and lentiform nucleus
- d-It is continuous below with cerebellar peduncles
- e-It is continuous above with corona radiata

158-Which part of internal capsule is supplied by anterior choroidal artery

- a-Anterior limb
- b-Posterior limb
- c-Genu
- d-Retrolemniscal part

159-Which part of internal capsule is supplied by posterior communicating artery :

- a-Anterior limb
- b-Genu
- c-Posterior limb
- d-Retrolemniscal part
- e-Sublemniscal part

160-All these arteries supply internal capsule except :

- a-Anterior choroidal artery
- b-Posterior choroidal artery
- c-Anterior cerebral artery
- d-Middle cerebral artery
- e-Posterior communicating artery

161-The main arterial supply of internal capsule is :

- a-Anterior cerebral artery
- b-Middle cerebral artery
- c-Posterior cerebral artery
- d-Posterior communicating artery
- e-Anterior choroidal artery

162-The genu of internal capsule gives passage to :

- a-Anterior thalamic radiation
- b-Frontopontine fibres
- c-Corticobulbar fibres
- d- Corticorubral fibres
- e-Corticostriate fibres

163-The posterior limb of internal capsule gives passage to the following fibers except :

- a-Corticospinal fibers
- b-Frontopontine fibers
- c-Cortico-rubral fibers
- d-Superior thalamic radiation
- e-Posterior thalamic radiation

164-The anterior limb of internal capsule gives passage to :

- a-Anterior thalamic radiation
- b-Frontopontine fibers
- c-Corticobulbar fibers
- d-All of the above
- e-a + b only

165-The frontopontine fibers pass through :

- a-Anterior limb
- b-Genu
- c-Posterior limb
- d-All of the above
- e-a + c only

166-Visual pathway fibers lie in which part of internal capsule :

- a-Anterior limb
- b-Posterior limb
- c-Genu
- d-Retro-lenticular part
- e-Sublenticular part

167-The retro-lenticular part of internal capsule gives passage to :

- a-Optic radiation
- b-Parietopontine fibres
- c-Occipitopontine fibres
- d-All of the above
- e-a + c only

168-The sublenticular part of internal capsule gives :

- a- Auditory radiation
- b-Tempro-pontine fibres
- c-Parietopontine fibres
- d-All of the above
- e-a + b only

Basal Ganglia

169-The basal nuclei of cerebrum include the following except :

- a-Caudate nucleus
- b-Lentiform nucleus
- c-Thalamus
- d-Amygdaloid nucleus
- e-Clastrum

170-The corpus striatum includes

- a-Caudate nucleus
- b-Lentiform nucleus
- c-Anterior limb of internal capsule
- d-All of the above
- e-a + b only

171-The head of caudate nucleus fused with :

- a-Anterior part of lentiform nucleus
- b-Anterior perforating substance
- c-Amygdaloid nucleus
- d-All of the above
- e-a + b only

172-Which part of caudate nucleus lies in the roof of inferior horn of lateral ventricle :

- a-Head
- b-body
- c-Tail
- d-All of the above
- e-None of the above

173-Concerning the caudate nucleus ,all are true except one :

- a- It is one of extrapyramidal center
- b-Its head bulges into lateral wall of anterior horn of lateral ventricle
- c-Its body lies in the floor of central part of lateral ventricle
- d-Its tail lies in the floor of inferior horn of lateral ventricle
- e-Its tail is fused with amygdaloid nucleus

174-The tail of the caudate nucleus is supplied by :

- a-Medial striate artery of Heubner
- b-Lateral striate artery
- c-Anterior choroidal artery
- d-All of the above
- e-a + b only

175-Concerning the lentiform nucleus ,all are true except one :

- a-Its medial surface is related to internal capsule
- b-Its lateral surface is related to external capsule
- c-Its inferior surface rests on the anterior perforating substance
- d-Its putamen is the efferent part of lentiform nucleus
- e-It regulate the muscle tone

176-The lentiform nucleus is supplied by :

- a-Anterior cerebral artery
- b-Middle cerebral artery
- c-Anterior communicating artery
- d-All of the above
- e-a + b only

177-As regard the amygdaloid nucleus ,one statement is wrong :

- a-It lies posteroinferior to inferior horn of lateral ventricle
- b-It is connected with tail of caudate nucleus
- c-It lies deep to uncus
- d-It receives afferent fibers from olfactory tract
- e-It gives rise to stria terminalis

178-The stria terminalis ends in :

- a-Anterior perforating substance
- b-Hypothalamic nuclei
- c-Nuclei of septum pellucidum
- d-All of the above
- e-a + b only

Lateral Ventricle

179-Concerning the anterior horn of lateral ventricle ,one statement is wrong :

- a-Its roof is formed by trunk of corpus callosum
- b-Its floor is formed by rostrum of corpus callosum
- c-Its medial wall is formed by septum pellucidum
- d-Its lateral wall is formed by body of caudate
- e-Anteriorly ,it is closed by genu of corpus callosum

180-The floor of central part of lateral ventricle is related to the following structures except :

- a-Body of caudate nucleus
- b-Stria terminalis
- c-Thalamostriate vein
- d-Upper surface of thalamus
- e-Anterior column of fornix

181-The bulb of posterior horn of lateral ventricle is produced by :

- a-Forceps major
- b-Forceps minor
- c-Calcarine sulcus
- d-Collateral sulcus
- e-None of the above

182-The roof of inferior horn of lateral ventricle is formed by :

- a-Tail of caudate
- b-Stria terminalis
- c-Amygdaloid nucleus
- d-All of the above
- e-a + b only

183-The floor of inferior horn of lateral ventricle is formed by :

- a-Fimbria of hippocampus
- b-Hippocampus
- c-Collateral eminence
- d-All of the above
- e-a + b only

184-The lateral wall of inferior horn of lateral ventricle is related to :

- a-Pallidum
- b-Putamen
- c-Tapetum
- d-All of the above
- e-None of the above

185-The lateral wall of posterior horn of lateral ventricle is related to :

- a-Tapetum
- b-Optic radiation
- c-Inferior longitudinal bundle
- d-All of the above
- e-a + b only

186-Bulb of posterior horn of lateral ventricle is formed of :

- a- Tapetum
- b-Optic radiation
- c-Calcarine sulcus
- d-Collateral sulcus
- e-Forceps major

187-Laterally , the lentiform nucleus is related to :

- a-Internal capsule
- b-External capsule
- c-Extreme capsule
- d-All of the above
- e-b + c only

188-The foramen of monro lies between :

- a-Anterior end of thalamus and body of fornix
- b- Anterior end of thalamus and lamina terminalis
- c-Anterior end of thalamus and anterior column of fornix
- d-Anterior column of fornix and lamina terminalis
- e-Anterior column of fornix and anterior commissure

189-Which part of lateral ventricle comes in contact with each other in median plane :

- a-Anterior horn
- b-Central part
- c-Inferior horn
- d-All of the above
- e-a + b only

190-Concerning the septum pellucidum ,all are true except one:

- a- It is formed of white and grey matter
- b-It occupies the gap between corpus callosum and thalamus
- c-It has a slit-like cavity called 5th ventricle
- d-It consists of two layers
- e-It forms the medial wall of anterior horn of lateral ventricle

Arterial Supply of the Brain

191-The following arteries are branches of 4th part of vertebral artery except :

- a-Posterior inferior cerebellar artery (PICA)
- b-Anterior inferior cerebellar artery (AICA)
- c-Posterior spinal artery
- d-Anterior spinal artery
- e-Medullar branches

192-Concerning the posterior inferior cerebellar artery ,all are true except one :

- a-It is the largest branch of vertebral artery
- b-It arises at the upper end of olive
- c-It has a tortuous course
- d-It runs backwards on the side of medulla oblongata
- e-It turns round the inferior cerebellar peduncle

193-The posterior inferior cerebellar artery (PICA)supplies the following structures except :

- a-Inferior vermis
- b-Posterior part of inferior surface of cerebellum
- c-Anterior part of inferior surface of cerebellum
- d-Lateral and dorsal parts of medulla oblongata
- e-Choroid plexus of 4th ventricle

194-Concerning the basilar artery ,all are true except one :

- a-It is formed at the lower border of the pons
- b-It is formed by union of 2 vertebral arteries
- c-It ascends along the basilar sulcus
- d-It occupies the interpeduncular cistern
- e-It terminates at the upper border of pons

195-The basilar artery gives the following branches except :

- a-Anterior inferior cerebellar artery
- b-Posterior inferior cerebellar artery
- c-Superior cerebellar artery
- d-Posterior cerebellar artery
- e-Pontine branches

196-The cerebral part of internal carotid artery gives the following branches except:

- a-Anterior communicating artery
- b-Posterior communicating artery
- c-Anterior choroidal artery
- d-Anterior cerebral artery
- e-Middle cerebral artery

197-Concerning the anterior choroidal artery, one statement is wrong :

- a-It is a branch of internal carotid artery
- b-It passes along the optic tract
- c-It runs around the cerebral peduncle
- d-It reaches the lateral geniculate body
- e-It enters the posterior horn of lateral ventricle through the choroid fissure

198-The anterior choroidal artery supplies the following structures except :

- a-Optic tract
- b-Lateral geniculate body
- c-Posterior part of posterior limb of internal capsule
- d-Head of caudate
- e-Choroid plexus of inferior horn of lateral ventricle

199-Concerning the anterior cerebral artery, all are true except one :

- a-It is the smaller of two terminal branches of I.C.A.
- b-It starts below the posterior perforating substance
- c-It passes forwards above the optic nerve
- d-It runs on the upper surface of corpus callosum
- e-It ends above the splenium of corpus callosum

200-The cortical branches of anterior cerebral artery supply :

- a-The medial surface of cerebrum except occipital lobe
- b-Upper one inch close to the superolateral surface
- c-Medial half of the orbital surface of frontal lobe
- d-All of the above
- e-a + b only

201-Which part of corpus callosum is not supplied by anterior cerebral artery

- a-Rostrum
- b- Genu
- c-Trunk
- d-Splenium
- e-a + b only

202-The central branches of anterior cerebral artery supply :

- a-Anterior part of corpus callosum
- b-Anterior part of anterior limb of internal capsule
- c-Septum pellucidum
- d-All of the above
- e-a + b only

203-Lesion to anterior cerebral artery leads to :

- a-Paralysis and loss of sensation of the lower limb
- b-Prolonged unconsciousness
- c-Apraxia (inability to perform purposeful movements)
- d-All of the above
- e-None of the above

204-Which of the following arteries lie in lateral sulcus of cerebral hemisphere :

- a-Anterior cerebral artery
- b-Posterior cerebral artery
- c-Anterior communicating artery
- d-Internal carotid artery
- e-Middle cerebral artery

205-Concerning the middle cerebral artery ,all are true except one :

- a-It is a larger of two terminal branches of I.C.A.
- b-It arises below the anterior perforating substance
- c-It passes laterally in the stem of lateral sulcus
- d-It continues backwards in the posterior ramus of lateral sulcus
- e-It crosses deep to insula

206-The cortical branches of middle cerebral artery supply the followings except

- a-Most of the superolateral surface of cerebrum
- b-Lateral surface of occipital lobe
- c-Lateral 1/2 of the orbital surface of frontal lobe
- d-Temporal pole
- e-Insula

207-The central branches of middle cerebral artery supply :

- a-Corpus striatum
- b-Posterior 1/2 of anterior limb of internal capsule
- c-Genu.
- d-Anterior part of posterior limb of internal capsule
- e-All of the above

208-The middle cerebral artery supplies the following cortical areas except :

- a-Motor & sensory areas of the body except lower limb
- b-Auditory area
- c-Visual area
- d-Motor speech area
- e-Sensory speech area

209-Concerning the posterior cerebral artery ,all are true except one :

- a-It is one of two terminal branch of basilar artery
- b-It curves around the cerebral peduncle
- c-It passes below the splenium of corpus callosum
- d-It enters the collateral sulcus
- e-It divides into branches which pass through the parieto-occipital and calcarine sulci

210-The posterior cerebral artery passes through :

- a-Calcarine sulcus
- b-Postcalcarine sulcus
- c-Parieto-occipital sulcus
- d-All of the above
- e-a + b only

211-The cortical branches of posterior cerebral artery supply :

- a-Tentorial surface of cerebrum except temporal pole
- b-Whole occipital lobe
- c-Lower one inch of superolateral surface
- d-All of the above
- e-a + b only

212-The central branches of posterior cerebral artery supply :

- a-Most part of diencephalon
- b-Midbrain
- c-Splenium
- d-All of the above
- e-a + b only

213-The posterior cerebral artery supplies the following except :

- a-Visual cortex
- b-Auditory area
- c-Uncus
- d-Thalamus
- e-Midbrain

214-The choroid plexus of 3rd and lateral ventricles are supplied from :

- a-Anterior cerebral artery
- b-Posterior cerebral artery
- c-Middle cerebral artery
- d-All of the above
- e-a + b only

215-The superolateral surface of cerebral hemisphere is supplied by :

- a-Anterior cerebral artery
- b-Posterior cerebral artery
- c-Middle cerebral artery
- d-All of the above
- e-a + b only

216-The motor and sensory areas are supplied by

- a-Middle cerebral artery
- b-Anterior cerebral artery
- c-Posterior cerebral artery
- d-All of the above
- e-a + b only

217-The thalamus is supplied mainly by :

- a-Anterior cerebral artery
- b-Posterior cerebral artery
- c-Middle cerebral artery
- d-All of the above
- e-a + b only

218-The arterial supply of the choroids plexuses of the ventricles is derived from all of the following arteries except :

- a-Anterior choroidal artery
- b-Posterior choroidal artery
- c-AICA
- d-PICA
- e-None of the above

219-The posterior communicating artery supplies the following structures except :

- a-Posterior part of the genu of the internal capsule
- b-Posterior part of the spinal cord
- c-Ventral half of the anterior 1/3 of the posterior limb of internal capsule
- d-Thalamus and hypothalamus
- e-Midbrain

Veins of the Brain

220-The followings are characters of cerebral veins except :

- a-They are thin walled
- b-They have no smooth muscle fibers
- c-They have no valves
- d-Most of them lie in the subdural space
- e-Some of them open into dural sinuses against the direction of blood flow

221-The superior cerebral veins drain into :

- a-Superior sagittal sinus
- b-Inferior sagittal sinus
- c-Cavernous sinus
- d-All of the above
- e-None of the above

222-The tentorial veins drain into :

- a-Basal vein
- b-Cavernous vein
- c-Superior petrosal sinus
- d-Transverse sinus
- e-All of the above

223-Concerning the superficial middle cerebral vein ,one statement is wrong :

- a-It runs along the central sulcus
- b-It drains part of superolateral surface
- c-It terminates in the cavernous sinus
- d-It communicates with superior sagittal sinus
- e-It also communicates with transverse sinus

224-The deep middle cerebral vein drains into :

- a-Basal vein
- b-Cavernous vein
- c-Superior petrosal sinus
- d-Transverse sinus
- e-All of the above

225-Concerning the internal cerebral veins ,all are true except one :

- a- There is one vein on each side of median plane
- b-It starts at the level of cerebral aqueduct
- c-It is formed by union of thalamostriate veins and choroidal veins
- d-It runs backwards in the roof of 3rd ventricle
- e-It joins with its fellow of the opposite side to form great cerebral vein

226-The basal vein is formed by union of :

- a-Superficial middle cerebral vein with deep middle cerebral vein
- b-Superficial middle cerebral vein with anterior cerebral vein
- c-Deep middle cerebral vein with internal cerebral vein
- d-Deep middle cerebral vein ,anterior cerebral vein and striate veins
- e-Anterior cerebral vein ,middle cerebral vein and posterior cerebral vein

227-As regard the great cerebral vein ,all are true except :

- a-It is a short median vein
- b-It is formed by union of right and left basal veins
- c-It emerges from beneath the splenium of corpus callosum
- d-It receives small veins from cerebellum and occipital lobes
- e-It ends by joining the inferior sagittal sinus to form straight sinus

Meninges

228-Concerning the pia matter of the brain ,all are true except one :

- a-It is a thin non vascular membrane
- b-It lines the bottom of sulci
- c-It sends a tubular sheath around the cranial nerves in the cranial cavity
- d-It provides the perivascular sheaths for the minute vessels
- e-It shares in the formation of tela choroida of the ventricle

229-Concerning the arachnoid matter of the brain , one statement is wrong :

- a-It is a transparent non vascular membrane
- b-It sinks into the sulci
- c-It is separated from the dura by subdural space
- d-It sends a tubular sheaths around the cranial nerves in the cranial cavity
- e-It forms a villi which penetrate the wall of superior sagittal sinus

230-The subarachnoid space of the brain contains the following except :

- a-C.S.F.
- b-Cranial nerves
- c-Blood vessels of the brain
- d-Middle meningeal vessels
- e-Fine fibers connecting the arachnoid matter to the pia matter

231-The cisterna magna lies between :

- a-Back of medulla and superior surface of cerebellum
- b-Back of pons and superior surface of cerebellum
- c-Back of medulla and inferior surface of cerebellum
- d-Back of pons and inferior surface of cerebellum
- e-Back of pons and back of medulla oblongata

232-The cisterna magna communicates with :

- a-The central canal of spinal cord
- b-4th ventricle
- c-3rd ventricle
- d-Superior sagittal sinus
- e-None of the above

233-The basal cistern contains

- a-Circle of Willis
- b-Roots of 3rd cranial nerve
- c-Roots of 4th cranial nerve
- d-All of the above
- e-a + b only

234-The sources of C.S.F. are :

- a-Choroid plexuses in the ventricle
- b-Ependyma lining the wall of ventricles
- c-Capillaries on the surfaces of the of the brain & spinal cord
- d-All of the above
- e-a + b only

235-The followings are characters of C.S.F. except :

- a-The total amount is 135 -150 c.c.
- b-The rate of production and absorption is about 200 ml / h.
- c-The total amount of C.S.F. per day is 2 liters
- d-Its pressure is 100 mm. water
- e-It is a clear watery fluid

236-Regarding cerebrospinal fluid (CSF), all are true except one :

- a-Is formed by choroid plexuses of ventricles
- b-Helps in removal of metabolites
- c-Finally reaches the blood stream
- d-Reaches cisterna magna through the aqueduct of Sylvius
- e-Is filtered through arachnoid granulations

237-The narrowest site in the circulation of C.S.F., which is at risk of obstruction is :

- a-Foramen of Monro
- b-Cerebral aqueduct
- c-Central canal of spinal cord
- d-Foramen of Magendie
- e-Foramen of Luschka

Pathways

General Sensory pathways

238-Concerning the pathway of conscious proprioception of the body below the head, all are true except one :

- a-Carries the sense of position, movement and crude touch
- b-The cell bodies of 1st neuron are found in nucleus proprius
- c-The gracile and cuneate tracts are axons of 1st order neuron
- d-The axons of 2nd neuron form sensory decussation in medulla oblongata
- e-3rd neurons form the superior thalamic radiation

239-Right spinal lemniscus carries pain sensation from :

- a-Right side of face
- b-Left side of face
- c-Right side of body
- d-Left side of body
- e-None of the above

240-The spinal lemniscus is formed of :

- a-Lateral spinothalamic tract
- b-Ventral spinothalamic tract
- c-Spinothalamic tract
- d-All of the above

e-a + b only

241-The general sensations include:

- a-Pain & temperature
- b-Conscious proprioception
- c-Unconscious proprioception
- d-Crude and light touch
- e-All of the above

242- The 3rd order neurons for general sensation of the whole body arise from :

- a-Posterolateral ventral nucleus of thalamus (PLVN)
- b-Posteromedial ventral nucleus of thalamus (PMVN)
- c-Anterior ventral nucleus of thalamus
- d-All of the above
- e-a + b only

243-The 2nd order neurons for light touch arise from :

- a-Substantia gelatinosa of Rolandi
- b-Nucleus proprius
- c-Clark's nucleus
- d-Gracile and cuneate nuclei
- e-None of the above

244-The 3rd order neurons of general sensations terminate in :

- a-PLVN
- b-PMVN
- c-Main sensory nucleus
- d-Postcentral gyrus
- e-Precentral nucleus

245-The gracile and cuneate tracts arise from :

- a-Gracile and cuneate nuclei
- b-Dorsal root ganglia
- c-Nucleus proprius
- d-Clarke's nucleus
- e-Mesencephalic nucleus

246-The 1st order neurons for unconscious proprioception of the body arise from :

- a-Dorsal root ganglia
- b-Mesencephalic nucleus
- c-Nucleus proprius
- d-All of the above
- e-a + b only

247-The axons of Clarke's nucleus form :

- a-Dorsal spinocerebellar tract
- b-Ventral spinocerebellar tract
- c-Ventral spinothalamic tract
- d-All of the above
- e-a + b only

248- Concerning the Clarke's nucleus ,all are true except one :

- a-It is the 2nd order neuron
- b-It forms the dorsal spinocerebellar tract
- c-It forms the ventral spinocerebellar tract
- d-All of its axons cross the opposite side
- e-Its axons terminate in the same side of cerebellum

249-The cell bodies of 1st order neurons for general sensations from the face are found in :

- a-Trigeminal ganglion
- b-Main sensory nucleus
- c-Spinal nucleus of trigeminal nerve
- d-Mesencephalic nucleus
- e-Gracile and cuneate nuclei

250-The central processes of trigeminal ganglion terminate in :

- a-Midbrain
- b-Pons
- c-Medulla oblongata
- d- Spinal cord
- e-All of the above

special sensory pathways

251- The cell bodies of 2nd order neurons in the visual pathway lie in :

- a-Retina
- b-Optic chiasma
- c-Lateral geniculate body
- d-Superior colliculus
- e-Visual area in occipital lobe

252- Concerning the visual pathway ,all are true except one :

- a-1st order neurons lie inside the retina
- b-2nd order neurons form optic nerve
- c-The temporal fibers cross the optic chiasma to enter the contralateral optic tract
- d-The visual fibers of optic tract terminate in the lateral geniculate body
- e-The visual reflex fibers terminate in the superior colliculus

253- The axons of 3rd order neurons in visual pathway form :

- a-Optic nerve
- b-Optic chiasma
- c-Optic tract
- d-Brachium of superior colliculus
- e- Optic radiation

254- Which of the following pathways consists of 4 types of neurons :

- a- Visual pathway
- b- Auditory pathway
- c- Proprioceptive pathway
- d- Pain and temperature pathway
- e- Touch pathway

255- Concerning the auditory pathway ,one statement is wrong :

- a- The cell bodies of 1st order neurons lie in the internal acoustic meatus
- b- The central processes of 1st neurons form the cochlear nerve
- c- The 2nd order neurons cross the midline in the pons forming trapezoid body
- d- The lateral lemniscus terminates in the inferior colliculus
- e- The axons of medial geniculate body form the auditory radiation

- 256-The axons of 3rd order neurons in auditory pathway terminate in :
- a-Medial geniculate body
 - b-Opposite inferior colliculus
 - c-Superior colliculus
 - d-All of the above
 - e-a + b only
- 257-The axons of auditory radiation are :
- a-2nd order neurons
 - b-3rd order neurons
 - c-4th order neurons
 - d-All of the above
 - e-b + c only
- 258-The cell bodies of 1st order neurons in the taste pathway are present in :
- a-Geniculate ganglion
 - b-Inferior ganglion of glossopharyngeal nerve
 - c-Inferior ganglion of vagus nerve
 - d-All of the above
 - e-a + b only
- 259-The axons of 1st order neurons in taste pathway terminate in :
- a-Geniculate ganglion
 - b-Nucleus solitaries
 - c-PMVN of thalamus
 - d-Gustatory area
 - e-None of the above
- 260-The axons of 3rd order neurons in taste pathway terminate in :
- a-Lower part of postcentral gyrus
 - b-Insula
 - c-Superior temporal gyrus
 - d-All of the above
 - e-a + b only

261-The nucleus solitaries receives the central processes of 1st order neurons from

- a-Facial nerve
- b-Glossopharyngeal nerve
- c-Vagus nerve
- d-All of the above
- e-a + b only

262-Concerning the olfactory pathway ,all are true except one :

- a-It consists of 2 order neurons
- b-The ceii bodies of 1st neurons are situated in olfactory epithelium
- c-The axons of 2nd order neurons form olfactory nerve
- d-Lateral olfactory stria ends in piriform lobe
- e-Medial olfactory stria ends in paraterminal gyrus

263-The lateral olfactory stria ends in :

- a-Uncus
- b-Anterior part of parahippocampal gyrus
- c-Paraterminal gyrus
- d-All of the above
- e-a + b only

264-The medial olfactory stria ends in :

- a- Paraterminal gyrus
- b-Uncus
- c-Anterior part of parahippocampal gyrus
- d-All of the above
- e-b + c only

Motor system

265-The pyramidal tract terminates in :

- a-Anterior horn cells of spinal cord
- b-Motor nuclei of cranial nerves
- c-Pontine nuclei
- d-All of the above
- e-a + b only

266- The corticospinal tract arises from :

- a-Motor area
- b-Premotor area
- c-General sensory area (3,1,2)
- d-All of the above
- e-a + b only

267-Concerning the course of corticospinal tract ,one statement is wrong :

- a-It descends in posterior limb of internal capsule
- b-It occupies the lateral 3/5 of crus cerebri
- c-It passes in the basis pontis
- d-Most of its fibers cross to the opposite side forming motor decussation
- e-It terminates in anterior horn cells of spinal cord

268-The followings are extrapyramidal tracts except :

- a-Corticospinal tract
- b-Rubrospinal tract
- c-Tectospinal tract
- d-Vestibulospinal tract
- e-Reticulospinal tract

269-The corticopontine fibers descends in parts of internal capsule except :

- a-Anterior limb
- b-Genu
- c-Posterior limb
- d-Retrolemniscular part
- e-Sublemniscular part

270-The corticopontine fibers descends in the crus cerebri to occupy :

- a-Medial 1/5 of crus cerebri
- b-Lateral 1/5 of crus cerebri
- c-Medial 3/5 of crus cerebri
- d-All of the above
- e-a + b only

Key Answers of M.C.QS.

1-d	31-e	61-b	91-d	121-d	151-d	181-a	211-d	241-e
2-c	32-c	62-c	92-a	122-e	152-b	182-d	212-d	242-e
3-d	33-e	63-c	93-c	123-c	153-c	183-d	213-b	243-b
4-e	34-d	64-e	94-c	124-d	154-c	184-c	214-b	244-d
5-d	35-c	65-c	95-d	125-b	155-c	185-d	215-d	245-b
6-b	36-e	66-c	96-b	126-d	156-e	186-e	216-e	246-e
7-a	37-e	67-d	97-b	127-d	157-d	187-e	217-b	247-e
8-a	38-e	68-d	98-a	128-b	158-d	188-c	218-c	248-d
9-d	39-c	69-d	99-d	129-d	159-b	189-e	219-b	249-a
10-e	40-c	70-c	100-c	130-d	160-a	190-b	220-d	250-e
11-e	41-b	71-e	101-b	131-e	161-b	191-b	221-a	251-a
12-b	42-a	72-b	102-a	132-e	162-c	192-b	222-e	252-c
13-b	43-a	73-d	103-d	133-d	163-e	193-c	223-a	253-e
14-d	44-b	74-d	104-c	134-b	164-e	194-d	224-a	254-b
15-d	45-c	75-b	105-a	135-a	165-e	195-b	225-b	255-a
16-e	46-b	76-c	106-e	136-e	166-d	196-a	226-d	256-d
17-a	47-c	77-d	107-c	137-e	167-d	197-e	227-b	257-c
18-b	48-b	78-c	108-b	138-c	168-e	198-d	228-a	258-d
19-c	49-b	79-b	109-d	139-b	169-c	199-b	229-b	259-b
20-b	50-c	80-d	110-b	140-d	170-d	200-d	230-d	260-e
21-b	51-d	81-e	111-e	141-d	171-e	201-d	231-c	261-d
22-b	52-a	82-b	112-e	142-a	172-c	202-d	232-b	262-c
23-d	53-e	83-d	113-e	143-b	173-d	203-d	233-d	263-e
24-c	54-e	84-b	114-c	144-c	174-c	204-e	234-d	264-a
25-d	55-d	85-b	115-e	145-e	175-d	205-e	235-c	265-e
26-d	56-d	86-d	116-d	146-c	176-d	206-b	236-d	266-d
27-d	57-d	87-d	117-a	147-d	177-a	207-e	237-b	267-b
28-b	58-e	88-a	118-d	148-c	178-d	208-c	238-b	268-a
29-a	59-d	89-e	119-c	149-c	179-d	209-d	239-d	269-b
30-c	60-e	90-c	120-d	150-c	180-e	210-d	240-d	270-e