

# GENESIS

(Post Graduation Medical Orientation Centre)

Friday Mega Batch 3

Total Number- 100

Pass Mark- 70

Topics: **Neuroanatomy**

Question 31-50 is based on Single answers

Time: 40 Min

Date: 24/01/20

## 1. Neural crest derivatives are

- a) Chromaffin cells of adrenal medulla
- b) Dorsal root ganglia
- c) Ependymal cell
- d) Schwann cell
- e) Microglia

**TTFTF**

## 2. The middle meningeal artery:

- a) Passes through the foramen ovale
- b) Lies in the anterior cranial fossa
- c) Lies in intimate relationship with the skull
- d) Lies deep to the zygomaticofrontal suture
- e) Also supplies the diploe.

**FFTFT [Ref.Lumley Q-368]**

## 3. Nerve fibres that supply skeletal muscle are axons of neurons located in

- a) Ventral gray column of the spinal cord
- b) Intermediolateral gray column of the spinal cord
- c) Somatic efferent nuclei of cranial nerves
- d) Dorsal nerve root ganglia
- e) Branchial efferent nuclei of cranial nerve

**TTFTF [Ref: Snell/P-139,333]**

### Explanation:

- a) Alpha neuron, from large multipolar nerve cell bodies in vertebral; gray column
- b) This gives preganglionic synaptic from T<sub>1</sub>-L<sub>2</sub> segment and preganglionic parasympathetic fibres
- c) GSE component present in CN III, IV, XII
- d) Related to sensory
- e) It belongs to SVE

## 4. Regarding supporting cells of NS

- a) Astrocytes are largest
- b) Astrocytes are only white matter
- c) All are derived from neural tube
- d) Microglia behaves like macrophages
- e) Form  $\frac{2}{3}$  of brain tissue

**TFTTT [Ref. Bd chaurasia 7<sup>th</sup> V-4 P-6,7]**

## 5. Gray matter contains

- a) Myelinated axons
- b) Protoplasmic astrocyte
- c) Neuronal cell bodies
- d) Oligodendrocytes
- e) Lymph vessels

**FTTTF**

### Explanation:

#### Gray matter contains:

- 1. Neuronal cell bodies.
- 2. Neuropil (dendrites and axon)
- 3. Glial cells
- 4. Synapses
- 5. Capillaries.

## 6. In Upper motor neuron lesion of facial nerve, the patient present with -

- a) Inability to open the eyelids of contralateral side
- b) Loss of taste sensation of contralateral part of the tongue
- c) Ability to wrinkle the skin of the forehead
- d) Inability to blow a whistle
- e) On protrusion, tongue deviates to opposite side

**FTTTF [ Abdullah, short case, 5<sup>th</sup>, P368]**

## 7. Match the white matter of cerebral hemispheres:

- a) Association fibre - fornix
- b) Commissural fibre - corpus callosum
- c) Projection fibre - internal capsule
- d) Association fibre - cingulum
- e) Optic radiation - projection fibre

**FTTTT**

## 8. The areas of cerebral cortex listed receive their arterial supply as indicated

- a) The precentral gyrus (face area) - middle cerebral artery
- b) Postcentral gyrus (face area) - Anterior cerebral artery
- c) Cuneus - posterior cerebral artery
- d) Inferior temporal gyrus - middle cerebral artery
- e) Wernicke's area - posterior cerebral artery

**TFTTF**

## 9. Blood brain barrier is absent in

- a) 3<sup>rd</sup> ventricle
- b) Cingulum
- c) Area postrema
- d) Tuber cinereum
- e) Wall of optic recess

**FTTTT (pineal gland, posterior pituitary)**

### 10. Superior sagittal sinus

- a) Lies between dura mater and arachnoid mater
- b) Is formed by union of great cerebral vein and superior cerebral vein
- c) Forms the right transverse sinus
- d) Has arachnoid villi
- e) Occupies the upper border of falx cerebri

**FTTTT [Ref BD V-3 Page-195]**

#### **Explanation:**

- a) Lies between the endosteal and meningeal layer of dura mater
- b) Tributaries are superior cerebral veins, Parietal emissary veins, venous lacunae from meningeal vein and Diploic vein
- c) Forms the confluence of sinus
- d) Arachnoid villi and granulation projecting into the lacunae
- e) Occupies the upper convex attached margin for the falx cerebri **(Ref BD V-3 Page-195)**

### 11. In subarachnoid hemorrhage

- a) CT scan is better than MRI
- b) Negative CT excludes subarachnoid Haemorrhage
- c) The site of bleeding can be diagnosed by MRI
- d) Blood is found in CSF within 24hours
- e) Fundoscopy may reveal haemorrhage

**TFTTT [Ref-Davidson /21<sup>st</sup>/1190]**

### 12. The hypothalamus

- a) Receives afferent fibres from the amygdaloid body through the fornix
- b) Is connected to the anterior lobe of the pituitary by median stalk
- c) Sends efferent fibres to the midbrain reticular nuclei
- d) Is related posteroinferiorly to the posterior perforated substance
- e) Is linked to the pituitary stalk by the tuberoinfundibular tract

**FFFFT (Lumly-395)**

### 13. Lateral tracts of spinal cord

- a) Lateral corticospinal
- b) Fasciculus cuneatus
- c) Anterior cerebellar
- d) Rubrospinal
- e) Olivospinal

**TTFTT**

### 14. The internal capsule of brain

- a) Lies lateral to the caudate nucleus
- b) Carries somatosensory fibres in the posterior limb
- c) Carries fibres from the ventroanterior nucleus in the posterior limb
- d) Carries pyramidal tract fibres in the posterior limb
- e) Carries the visual radiation

**TTFTT [Ref: lumley/Q-389/P-244]**

#### **Explanation**

- c) These fibers from the medial nuclei pass to the frontal lobe in the anterior limb of the internal capsule **[Ref: lumley/Q-389/P-244]**

### 15. In the floor the fourth ventricle

- a) The trigonum vagi is at the inferior angle next to the midline
- b) The facial colliculus is next to the midline in its upper half
- c) The vestibular area is adjacent to the lateral angle
- d) The trigonum hypoglossi is lateral to the trigonum vagi
- e) The abducent nucleus lies deep to the facial colliculus

**FTTFT [Ref. Snell's Neuroanatomy /8<sup>th</sup>/P-197]**

### 16. Choroid plexus is seen in

- a) Trigone of lateral ventricle
- b) Roof of the third ventricle
- c) Floor of the fourth ventricle
- d) Confluence of the body and temporal horn of lateral ventricle
- e) Central canal of spinal cord

**TTFFF [Ref. Snell's Neuroanatomy /8<sup>th</sup>/Fig-16-8/443]**

### 17. The following structures are found in the midbrain

- a) The substantia nigra
- b) The superior colliculi (corpora quadrigemina)
- c) The motor nucleus of the trigeminal nerve
- d) The nucleus of the abducent nerve
- e) The decussation of the superior cerebellar peduncles

**TTFFT**

### 18. Pons is supplied by

- a) Posterior cerebral artery
- b) Basilar artery
- c) Vertebral artery
- d) Superior cerebellar artery
- e) Anterior inferior cerebellar artery

**FTFTT**

**19. Result of spinal cord hemisection**

- a) Ipsilateral loss of pain sensation
- b) Ipsilateral loss of deep reflexes
- c) Contralateral loss of thermal sensation
- d) No contralateral paralysis
- e) Ipsilateral rigidity in the limbs

**FFTTT**

**20. Dorsal root ganglia contain the cell bodies of**

- a) Dorsal column of spinal cord
- b) Reticulospinal tract
- c) Pontocerebellar tract
- d) Dorsolateral tract
- e) Lateral spinothalamic tract

**TFFTF [Ref:Lumley/Q-410/P-258]**

**21. Functional components of vagus nerve**

- a) GVE
- b) GSE
- c) SVE
- d) GSA
- e) SVA

**TFTTT**

**22. Regarding cranial nerve**

- a) Spinal root of accessory nerve is sensory and cranial root is motor
- b) Secretomotor component of facial nerve supplies parotid glands
- c) Lacrimal gland is supplied by oculomotor nerve
- d) Posterior belly of digastric is supplied by facial nerve
- e) Both ophthalmic & maxillary division of Trigeminal nerves is sensory

**FFFTT**

**23. Components of Limbic system includes**

- a) Cingulate gyrus
- b) Posterior nucleus of the thalamus
- c) Amygdala
- d) Septal nuclei
- e) Dorsal longitudinal fasciculus

**TFTTF**

**24. Lumbar puncture is diagnostic of**

- a) Meningitis
- b) Guillain barre syndrome
- c) Multiple sclerosis
- d) Spinal anaesthesia
- e) Epidural catheterization

**TTTFF [Neuroanatomy Sheet -68]**

**25. Cavernous sinus is pierced by the followings**

- a) Oculomotor nerve
- b) Trigeminal nerve
- c) Abducent nerve
- d) Internal carotid artery
- e) Mandibular nerve

**TFTTF**

**New**

**26. Causes of decrease muscle tone**

- a) Lower motor neuron lesion
- b) Extrapyramidal lesion
- c) Cerebellar lesion
- d) Peripheral nerve lesion
- e) Thalamic lesion

**TFTTF**

**27. The light reflex involves the following structure**

- a) Edinger-westphal nucleus
- b) Ciliary ganglion
- c) Lateral geniculate body
- d) Oculomotor nerve
- e) Occipital cortex

**TTFTF**

**28. Cross section of midbrain at inferior colliculus level**

- a) Trochlear nerve
- b) Superior cerebellar peduncle
- c) Oculomotor nerve
- d) Tectospinal tract
- e) Red Nucleus

**TTFTF**

**29. Increased pressure within the carotid sinus results in**

- a) Reflex bradycardia
- b) Reflex hypercapnia
- c) Decrease in sympathetic tone
- d) Decrease in diameter of blood vessels
- e) Decrease in cardiac contractility

**TFTFT**

**30. The nerve cell present in cerebral cortex**

- a) Pyramidal cell
- b) Stellate cell
- c) Fusiform cell
- d) Purkinje cell
- e) Schwann cell

**TTTFF**

Each question below contains five suggested answers- choose the one best response to each question (31-50)

**31. Pineal body is a Component of**

- a) Telencephalon
- b) Diencephalon
- c) Metencephalon
- d) Myelencephalon
- e) Mesencephalon

**B**

**32. A patient admits in the hospital with headache and vomiting. CT scan of brain suggests a blockage between the 3<sup>rd</sup> and 4<sup>th</sup> ventricles. Which of the following structure is most likely to be blocked**

- a) Cerebral aqueduct
- b) Interventricular foramen
- c) Foramen of monro
- d) Foramen of luschka
- e) Foramen of magendie

**A**

**33. Horner's syndrome is characterized by all except**

- a) Mydriasis
- b) Ptosis
- c) Anhidrosis
- d) Enophthalmos
- e) Vasodilation of skin arterioles

**A**

**34. Which one of the following is most likely to cause a bilateral facial nerve palsy?**

- a) Acoustic neuroma
- b) Cholesteatoma
- c) Bell's palsy
- d) Sarcoidosis
- e) Amyloidosis

**D**

**35. Which of the following is a mixed nucleus**

- a) Tractus Solitarius
- b) Dorsal nucleus
- c) Superior salivatory nucleus
- d) Inferior salivatory nucleus
- e) Mesencephalic nucleus

**B**

**36. A 48-year-old man with a 3-week history of persistent headache and signs of raised intracranial pressure had a computed tomographic scan that showed a tumour in the floor of the fourth ventricle. Which of the following cranial nerve nuclei is most likely to be compressed by this tumour?**

- a) Abducent
- b) Oculomotor
- c) Optic
- d) Spinal accessory
- e) Trigeminal

**A**

**37. Thalamus is the relay station for nearly all sensory impulse except**

- a) Auditory Pathway
- b) Visual Pathway
- c) Olfactory pathway
- d) Pain pathway
- e) Tract of gall

**C**

**38. Which one is the largest nucleus of cerebellum**

- a) Globose
- b) Fastigial
- c) Dentate
- d) Red nucleus
- e) Emboliform

**C**

**39. The posterior communicating artery of the cerebral arterial circle (of Willis) directly connects the posterior cerebral artery to the:**

- a) Anterior communicating artery
- b) Ophthalmic artery
- c) Internal carotid artery
- d) Anterior cerebral artery
- e) Vertebral artery

**C**

**40. Which of the following structure is not pierced by the lumbar puncture needle**

- a) Superficial fascia
- b) Deep fascia
- c) Supraspinous ligament
- d) Infrapsoas ligament
- e) Ligamentous flavum

**B**

**41. Transverse section at level of superior colliculus, which of the following structure is not found**

- a) Red nucleus
- b) 3<sup>rd</sup> cranial nerve
- c) All four lemniscus
- d) Reticular formation
- e) Tegmental decussation

**C (lateral lemniscus terminate at the level of inferior colliculus)**

**42. Internal capsule is supplied by all except**

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

**B**

**43. Hallmark for cauda equina syndrome**

- a) Low back pain
- b) Gait disturbance
- c) Sexual impotence
- d) Saddle anaesthesia
- e) Bladder dysfunction

**D**

**44. False statement on cranial venous sinuses**

- a) Superior sagittal sinus passes backwards to the internal occipital protuberance
- b) Inferior sagittal sinus passes backwards to the free edge of the tentorium cerebelli
- c) Sigmoid sinus grooves the inner surface of the mastoid process
- d) Inferior petrosal sinus grooves the parieto-occipital suture
- e) Straight sinus runs posterior within the tentorium cerebelli

**D**

**45. 45 years old man came to the Emergency with weakness of both leg while walking up stairs, numbness over the lower part both legs and feet, 2 days later weakness of the muscle on the right side of face and H/O mild upper RTI 2-3 weeks back. What is possible diagnosis?**

- a) Multiple sclerosis
- b) Alzheimer's Disease
- c) Guillain Barre syndrome
- d) Brown – sequard syndrome
- e) Neuroblastoma

**C**

**NEW**

**46. Facial nerve palsy occurs when internal capsule lesion in the following site occurs**

- a) Anterior limb
- b) Genu
- c) Posterior limb
- d) Sublentiform
- e) Retrolentiform

**B**

**47. Neurological cells of PNS**

- a) Microglia
- b) Ependymal cell
- c) Astrocytes
- d) Oligodendrocytes
- e) Schwann cells

**E**

**48. Which one is the projection fiber**

- a) Corpus callosum
- b) The fornix
- c) Uncinate fasciculus
- d) Cingulum
- e) Internal capsule

**E**

**49. Right lower quadrantanopia occurs**

- a) Right optic nerve
- b) Left parietal lobe
- c) Left temporal lobe
- d) Optic chiasma
- e) Visual cortex

**B**

**50. A middle aged man came with paraplegia with sensory level deficit at the umbilicus. Upper limb reveal normal finding. Where is the sensory level**

- a) T<sub>10</sub>
- b) T<sub>12</sub>
- c) L<sub>1</sub>
- d) C<sub>2</sub>
- e) Lumbosacral region

**A**