(LH 033a) **AUGUST 2015** **Sub. Code: 1564**

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

Paper I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P.Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Describe the anatomy of pyramidal pathway and its connections to basal ganglia and cerebellum.
   Describe how posture and movement is effected and applied anatomy of lesions of pyramidal pathway.

2. Trace the anatomical pathway of hearing and balance.
   Write on brainstem reflexes and brainstem evoked response audiometry (BERA).

II. Write notes on: **(10 x 7 = 70)**

1. Memory.
2. Dopamine.
3. Nerve fiber – type and function.
4. Pathology of ependymoma.
5. Immunohistochemistry.
6. Cerebral blood flow.
7. Draw a neat labelled diagram of spinal cord transverse section at the cervical level.
8. Synapse and synthesis of acetyl choline.
9. Pyridoxine.
10. Spinal reflex arc.

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(LJ 033) AUGUST 2016 **Sub. Code: 1564**

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

Paper I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P.Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Describe the Anatomy of Thalamus, Thalamic connections and Thalamic Syndromes.

2. Describe the Bladder pathways and Bradley loops / elaborate about Neurogenic bladder.

II. Write notes on: **(10 x 7 = 70)**

1. Grading system of Gliomas.
2. Temasolomide.
3. Neuro physiology of Pineal Gland.
4. Cerebral edema.
5. WADA test.
6. Floor of the IV Ventricle.
7. Primitive Neuroectodermal Tumour (PNET).
8. Dopamine agonists.
9. Babinski Sign.
10. Audiogram.

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(LK 033) FEBRUARY 2017 **Sub. Code: 1564**

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

Paper I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P.Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss in detail the cerebrospinal fluid production and circulation with relevant diagrams.
   Add a note on the normal cerebrospinal fluid contents and in central nervous system infections.

2. What is nerve action potential?
   Write in detail how a nerve conducts an impulse, resting membrane potential and refractory period?

II. Write notes on: **(10 x 7 = 70)**

1. Visual evoked potential.
2. Serotonin.
3. Pathological features in meningioma with WHO grading.
4. Blood brain barrier.
5. Noradrenergic transmission.
6. Neuroglia.
7. Folic acid.
8. Cerebral hypoxia.
9. Pathophysiology of seizures.
10. Biochemical changes in head injury.

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(LL 033) AUGUST 2017 **Sub. Code: 1564**

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

Paper I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P.Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss in detail the cerebrospinal fluid production and circulation with relevant diagrams. Add a note on the normal cerebrospinal fluid contents and in central nervous system infections.

2. What is nerve action potential?
   Write in detail how a nerve conducts an impulse, resting membrane potential and refractory period.

II. Write notes on: **(10 x 7 = 70)**

1. Visual evoked potential.
2. Serotonin.
3. Pathological features in meningioma with WHO grading.
4. Blood brain barrier.
5. Noradrenergic transmission.
6. Neuroglia.
7. Folic acid.
8. Cerebral hypoxia.
9. Pathophysiology of seizures.
10. Biochemical changes in head injury.

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(LM 033) FEBRUARY 2018 **Sub. Code: 1564**

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

Paper I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P.Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Microsurgical Anatomy of Cerebello Pontine Angle in relation to different approaches.

2. Nuclear and Supra Nuclear control of extra ocular movements.

II. Write notes on: **(10 x 7 = 70)**

1. Neuro opthalmic Manifestations of Sellar/Suprasellar lesion.
2. Tumor markers.
3. Pathology of Ependymoma.
4. WHO grading of Meningioma.
5. Prognostic factors of Medulloblastoma.
6. ICP waves.
7. Anatomical basis of Decerebrate rigidity.
8. Colloid cyst.
9. Fornix.
10. Apoptosis.

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(LN 033) AUGUST 2018 **Sub. Code: 1564**

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

Paper I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P.Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Describe the anatomy of the synapse and junctional transmission.

2. Describe the microsurgical anatomy of the cerebello-pontine angle. Write on posterior inferior cerebellar artery, anterior inferior cerebellar artery, superior cerebellar artery, their branches and distribution.

II. Write notes on: **(10 x 7 = 70)**

1. Adrenergic transmission.
2. Gamma Amino Butyric Acid.
3. Brain ischemia.
4. Vitamin B_{12}.
5. Diabetes Insipidus.
6. Pathophysiology of arteriovenous malformation.
7. Chordoma.
8. Circumventricular organs.
9. Orthodromic and Antidromic conduction in neuron.
10. Motor unit and electromyography.

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(LO 033) FEBRUARY 2019 **Sub. Code: 1564**

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

Paper I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P. Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss in detail about neurulation and anatomical basis of neural tube defects.

2. Discuss in detail about neuroanatomy of basal ganglia and its clinicopathological correlation.

II. Write notes on: **(10 x 7 = 70)**

1. Foramen of Monro.
2. Cavernous Sinus.
3. Ependymoma.
4. Electroencephalography.
5. Synaptic transmission.
6. Optic chiasm.
7. Decerebrate rigidity.
8. Mannitol.
9. Tuberculous meningitis.
10. Classification of pituitary tumors.

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(LP 033) AUGUST 2019 **Sub. Code: 1564**

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

Paper I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P. Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Describe with diagrams the course of the Facial Nerve and the relevance of its anatomy to the localization of its lesions.

2. Describe in detail the formation, circulation and absorption of Cerebrospinal Fluid. Discuss the abnormalities of Cerebro Spinal Fluid physiology in relation to Hydrocephalus.

II. Write notes on: **(10 x 7 = 70)**

1. Synaptic Inhibition and Facilitation.
2. 2016 World Health Organisation classification of Medulloblastoma.
3. H- Reflex and F- Wave.
4. Brain Herniations.
5. Brainstem Auditory Evoked Potentials.
6. Tracts of Goll and Burdach.
7. Derivatives of Neural Tube.
8. The Sympathetic Trunks.
9. Laminae of Cerebral Cortex.
10. Principal Neurotransmitter Systems of the Central Nervous System.

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(LR 033) NOVEMBER 2020 **Sub. Code: 1564**

(AUGUST 2020 SESSION)

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

Paper I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P. Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss in detail with diagrams about all thebasal cisterns along the course of anterior cerebral arteries, their boundaries, contents and applied surgical anatomy of each basal cistern with relevance to pathology specific to the respective basal cisterns.

2. Describe with relevant diagrams the various cerebral circuits that are connected with higher mental functions. Discuss in detail with neatly labelled diagrams the applied anatomy of the Peri-sylvian network and the clinicopathological correlation of the language deficits caused by dysfunctions of the peri-sylvian circuit.

II. Write notes on: **(10 x 7 = 70)**

1. Anatomical variations of vertebral artery in and around the region of Foramen magnum.
2. Clinico-imaging correlationof various stages of uncal herniation.
3. Optic nerve sheath diameter and its relevance to neurosurgery.
4. Neurophysiology of opisthotonous posturing
5. Substantia nigra and its connections
6. Circadian rhythm and sleep cycle
7. Gelastic seizure
8. Prof.T.S.Kanaka
9. Hypertonic saline and its use in neurosurgery
10. Trans cranial doppler and its uses in neurosurgery.

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(MCH 0821) AUGUST 2021 **Sub. Code: 1564**

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

Paper I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P. Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Describe with diagrams the course of the oculomotor nerve and the relevance of its anatomy to the localization of its lesions

2. Discuss in detail the pathophysiology of idiopathic intracranial hypertension and about the factors that influence decision making in its management.

II. Write notes on: **(10 x 7 = 70)**

1. Pathophysiology of neurovascular conflict.
2. Neural pathway for babinski reflex.
3. Decorticate rigidity.
4. Describe briefly the neural connections involved in horizontal gaze palsy.
5. Olfactory tract.
6. Neurophysiology of neurological deficits in tethered cord syndrome.
7. Embryological basis of chiari II malformation.
8. Cubital tunnel syndrome.
9. Peroneal neuropathy.
10. Blood supply of spinal cord.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

(MCH 0822) **AUGUST 2022** **Sub. Code: 1564**

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

Paper I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P. Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Describe in detail about the Microsurgical anatomy of cerebellopontine angle and the clinical manifestation of CP angle lesion.

2. Describe with diagram about the course and branches of middle cerebral artery (MCA) and the functional anatomy of the brain supplied by MCA.

II. Write notes on: **(10 x 7 = 70)**

1. Pyramidal tract.
2. Dopamine.
3. Hypoglossal Nerve.
4. Electrocorticography.
5. Functions of hypothalamus.
6. Cerebral salt wasting syndrome.
7. Anatomy of Atlantoaxial ligaments.
8. Acromegaly.
9. Cross sectional anatomy of cervical spinal cord.
10. Circle of willis.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

(MCH 0223) **FEBRUARY 2023** **Sub. Code: 1564**

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

PAPER I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P. Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss in detail with diagrams about Sella turcica and cavernous sinus. Describe about various pathological lesions, microsurgical and Endoscopic anatomy of this region.

2. Describe with diagrams about the course and branches of posterior cerebral artery and the functional anatomy of brain supplied by the posterior cerebral artery.

II. Write notes on: **(10 x 7 = 70)**

1. Basilar artery and its branches.
2. Brain stem reflexes.
3. WHO latest classification of Medulloblastoma.
4. Anatomy and function of medial temporal lobe.
5. Serotonin.
6. Cerebrospinal fluid circulation – clinical relevance.
7. Pathology of glioma.
8. Internal capsule – Anatomy and function.
9. Mechanism of action of Antiepileptics.
10. Diffuse Axonal Injury.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

(MCH 0124) **JANUARY 2024** **Sub. Code: 1564**

M.Ch. – NEURO SURGERY

THREE YEARS COURSE

PAPER I – NEUROANATOMY, NEUROPHYSIOLOGY NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P. Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Describe with diagram about the course and branches of Anterior Cerebral artery (ACA) and functional anatomy of the brain supplied by ACA.

2. Discuss in detail with diagrams about the anatomy of ventricular system in brain. Describe about the microsurgical and endoscopic anatomy of the third ventricle and various pathological lesions arising from it.

II. Write notes on: **(10 x 7 = 70)**

1. Blood supply of Spinal cord.
2. Superior orbital fissure.
3. Inverted Supinator reflex.
4. Babinski sign.
5. Biochemical differentiation of Bacterial and Tuberculous meningitis.
6. Neurotransmitters.
7. Adenosine in Neurosurgery.
8. Pathogenesis of Neurocysticercosis.
9. Pathology of pineal tumours.
10. Blood brain barrier.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

(MCH 0225) **FEBRUARY 2025** **Sub. Code: 1564**

M.Ch. BRACH II - NEURO SURGERY
THREE YEARS COURSE

PAPER I – NEUROANATOMY, NEUROPHYSIOLOGY, NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P. Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Explain with appropriate diagrams the complete visual pathway. Discuss the various visual field defects in lesions involving the visual pathway.

2. Describe the anatomy of bladder pathways. Discuss about neurogenic bladder.

II. Write notes on: **(10 x 7 = 70)**

1. Foramen of Monroe.
2. Hyperprolactinemia.
3. Decerebrate rigidity.
4. Brain-death certification.
5. Pathology of Medulloblastoma.
6. Draw a diagram of cross section of cervical spinal cord.
7. Pathogenesis of brain abscess.
8. Somatosensory evoked potentials.
9. Dopamine agonists.
10. Difference between Schwannoma and Neurofibroma.

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THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

(MCH 0825) **AUGUST 2025** **Sub. Code: 1564**

M.Ch. BRANCH II - NEURO SURGERY
THREE YEARS COURSE

PAPER I – NEUROANATOMY, NEUROPHYSIOLOGY, NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P. Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Physiological functions of Hypothalamus.
2. Anatomy and Microsurgical Anatomy of 3rd ventricle.

II. Write notes on: **(10 x 7 = 70)**

1. Monoamines.
2. Ependymoma-Pathology.
3. Human Chorionic Gonadotrophin.
4. Pineal gland.
5. Circumventricular organs.
6. Memory.
7. Fosphenytoin.
8. H reflex.
9. Secondary Neurulation.
10. Blood supply of internal capsule.

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THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

(MCH 0126) **JANUARY 2026** **Sub. Code: 1564**

M.Ch. - NEURO SURGERY

THREE YEARS COURSE

PAPER I – NEUROANATOMY, NEUROPHYSIOLOGY, NEUROCHEMISTRY AND NEUROPATHOLOGY

Q.P. Code: 181564

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Describe the embryology and ligamentous anatomy of Craniovertebral Junction (CVJ).

2. Discuss the formation, circulation and absorption of Cerebrospinal Fluid (CSF) and the pathophysiology of Idiopathic Intra Cranial Hypertension.

II. Write notes on: **(10 x 7 = 70)**

1. Cerebral Salt Wasting Syndrome.
2. Venous drainage of brain.
3. Acromegaly.
4. Circumventricular Organs.
5. WHO 2021 classification of Meningioma.
6. Pregabalin.
7. Auto regulation of Cerebral blood flow.
8. Pyramidal tract.
9. Nuclei of Trigeminal nerve.
10. Tumor markers in Central Nervous System.

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