APRIL - 2001

[KD 031] Sub. Code : 1561

M.Ch. DEGREE EXAMINATION

(Higher Specialities)

Branch II — Neurosurgery

(New and Revised Regulations for 5 Years Course)

Part II

Paper I — NEUROANATOMY AND NEUROPHYSIOLOGY

Time : Three hours Maximum : 100 marks

1. Discuss gross and microscopic anatomy of cavernous sinus. (25)

2. Describe anatomy and physiology of control of micturition. (25)

3. Write short notes on : (5 × 10 = 50)

(a) Muscle stretch reflex

(b) Cerebello pontine angle

(c) Circle of Willis

(d) Control of saccadic eye movements

(e) Structural asymmetry of cerebral hemispheres.

NOVEMBER - 2001

[KE 031] Sub. Code : 1561

M.Ch. DEGREE EXAMINATION

(Higher Specialities)

(New and Revised Regulations for 5 Years Course)

Branch II — Neurosurgery

Part II

Paper I — NEUROANATOMY AND NEUROPHYSIOLOGY

Time : Three hours Maximum : 100 marks

1 Describe the organization of motor cortex (25)

2 Describe the physiology of pain. (25)

3 Write short notes on : (5 × 10 = 50)

(a) Opercular cortex

(b) Dorsal root ganglia

(c) Subthalamic nucleus

(d) Physiology of CSF production

(e) Optic chiasma.

MARCH - 2002

[KG 031] Sub. Code : 1561

M.Ch. DEGREE EXAMINATION

(Higher Specialities)

(New and Revised Regulations for 5 years course)

Branch II — Neurosurgery

Part II

Paper I — NEUROANATOMY AND NEUROPHYSIOLOGY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Discuss the connections of the cerebellum. Add a note on the clinical features of cerebellar disorders. (25)

2. Discuss the concept of auto regulation of cerebral circulation. (25)

3. Write short notes on : (5 × 10 = 50)

(a) Anterior choroidal artery

(b) Creatine kinase.

(c) Agraphia without alexia.

(d) Physiology of nerve conduction.

(e) Neuro–peptides

SEPTEMBER - 2002

[KH 031] Sub. Code : 1561

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

Branch II — Neurosurgery

(New and Revised Regulations for 5 years course)

Part II

Paper I — NEUROANATOMY AND NEUROPHYSIOLOGY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Discuss arterial supply and venous drainage of spinal cord. (25)

2. Describe the functional anatomy of visual pathways. (25)

3. Write short notes on : (5 × 10 = 50)

(a) Developmental basis for spinal dysraphism

(b) Blood brain barrier

(c) Cerebral dominance

(d) Medial longitudinal fasciculus

(e) Somatosensory evoked potentials.

APRIL - 2003

[KI 031] **Sub. Code : 1561**

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations for 5 years course)

Branch II — Neurosurgery

Part II

Paper I — NEUROANATOMY AND NEUROPHYSIOLOGY

Time : Three hours Maximum : 100 marks

1. Discuss the formation circulation and absorption of cerebro–spinal fluid. Add a note on the contents of normal CSF. (25)

2. Discuss the connections of Basal ganglia. Add a note on sites of surgical lesions in various extrapyramidal disorders. (25)

3. Write short notes on : (5 x 10 = 50)

(a) Pain pathways

(b) Venous drainage of the brain

(c) Cerebral dominance

(d) Apraxia

(e) Area Prostrema.

OCTOBER - 2003

[KJ 031] Sub. Code : 1561

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations for 5 Year Course)

Branch II — Neurosurgery

Part II

Paper I — NEURO ANATOMY AND NEURO PHYSIOLOGY

Time : Three hours. Maximum : 100 marks

Theory : Two hours and forty minutes — Theory : 80 marks

M.C.Q. : Twenty minutes — M.C.Q. : 20 marks

MCQ must be answered **SEPARATELY** in the Answer Sheet provided as per the instructions on the first page of MCQ Booklet.

Answer ALL questions.

Draw suitable diagram wherever necessary.

Essay Questions — (2 × 15 = 30 marks)

1. Write an essay on recent advances in Neurophysiological investigations in neurological diagnosis with its limitations.

2. Write an essay on Neuro anatomy of Limbic system and neurology of emotion.

Short notes — (10 × 5 = 50 marks)

3. (a) Refractory period.

(b) Pathways of Basal ganglia.

(c) Development of mid brain.

(d) Arterial supply of spinal cord.

(e) Functional areas of cerebellar cortex.

(f) Trans neuronal degeneration.

(g) Renshaw cell.

(h) Pyramid.

(i) Functions of Hypothalamic nuclei.

(j) Regeneration of Axon in Central Nervous system.

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APRIL - 2004

[KK 031] Sub. Code : 1561

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(New and Revised Regulations for 5 Years Course)

Branch II — Neuro Surgery

Part II

Paper I — NEUROANATOMY AND NEUROPHYSIOLOGY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

A. Essay questions : (2 × 15 = 30)

(1) Describe in detail the Neurulation and caudal neural tube formation and indicate the disorders of neurulation and neural tube defects.

(2) Discuss in detail about CSF formation, circulation and absorption. How intracranial pressure is monitored?

B. Write short notes on : (10 × 5 = 50)

(1) Foramina of Monro.

(2) Tegmental fields of foral

(3) Substantia Nigra.

(4) Amygdala.

(5) Dentate nucleus.

(6) Angular gyrus.

(7) Non-dominant parietal lobe functions.

(8) Confluens sinus.

(9) EEG rhythm.

(10) Rhomberg's sign.

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AUGUST - 2004

[KL 031] Sub. Code : 1561

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations for 5 Year Course)

Branch II — Neurosurgery

Part II

Paper I — NEURO ANATOMY AND NEURO PHYSIOLOGY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagram wherever necessary.

I. Essay Questions : (2 × 15 = 30)

(1) Describe the functional divisions of cerebellum with suitable illustration.

(2) Discuss pathophysiology of pain and its central and peripheral modulation.

II. Write short notes on : (10 × 5 = 50)

(a) Foramina of Luschka and Magendie

(b) Uncus

(c) Lentiform nucleus

(d) Medial logitudinal fasiculus (M.L.F.)

(e) Cingulate gyrus

(f) Hemianopia

(g) Rexed laminae

(h) Apraxia

(i) Cavernous sinus

(j) Axon flow.

FEBRUARY - 2005

[KM 031] Sub. Code : 1561

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(New and Revised Regulations for 5 Years Course)

Branch II — Neuro Surgery

Part II

Paper I — NEUROANATOMY AND NEUROPHYSIOLOGY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Essay : (2 × 15 = 30)

(1) Discuss the neuroanatomy and neurophysiology and differential diagnosis of coma.

(2) Discuss the Neuro anatomy of the basal ganglia and its clinical applications in movement disorders.

II. Short notes : (10 × 5 = 50)

(a) Refractory period

(b) Anatomy of Trigeminal nucleus

(c) Trans neuronal degeneration

(d) Inter nuclear opthalmaplegia

(e) Poland syndrome

(f) Reflex arc

(g) Blood supply of internal capsule

(h) Mollarets triangle

(i) Maternal inheritance

(j) Hutchinson's pupil.

FEBRUARY - 2006

[KO 031] **Sub. Code : 1561**

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(New and Revised Regulations for 5 Years Course)

Branch II — Neuro Surgery

Part II

Paper I — NEUROANATOMY AND NEUROPHYSIOLOGY

Time : Three hours **Maximum : 100 marks**

Theory : Two hours and forty minutes **Theory : 80 marks**

M.C.Q. : Twenty minutes **M.C.Q. : 20 marks**

Answer ALL questions.

I. Essay : **(2 × 15 = 30)**

(1) Discuss the Neuroanatomy and physiology of speech.

(2) Describe the neuroanatomy of CSF circulation and discuss various types of obstruction and its management.

II. Short notes : **(10 × 5 = 50)**

(a) Periaqueductal stenosis

(b) Phakomatoses

(c) Fibrous dysplasia

(d) Lateral medullary syndrome

(e) Pain and gate control theory

(f) Muscle spindle

(g) Kluver Bucy syndrome

(h) REM Sleep

(i) Endorphins

(j) Neurotransmitters.

AUGUST - 2006

[KP 031] Sub. Code : 1561

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(New and Revised Regulations for 5 Years Course)

Branch II — Neuro Surgery

Part II

Paper I — NEUROANATOMY AND NEUROPHYSIOLOGY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Essay questions :

(1) Discuss the Anatomy and Neurophysiology of coma and its differential diagnosis. (20)

(2) Discuss the functional Neuroanatomy of the Hypothalamus. (15)

(3) Discuss the Neurophysiological basis of Surgical Treatment of Parkinson's Disease. (15)

II. Short notes : (6 × 5 = 30)

(a) Spect.

(b) Axon transport.

(c) Development of Medulla oblongata.

(d) Cerebral circulation.

(e) Neural control of Respiration.

(f) Vestibulo spinal tract.

FEBRUARY - 2007

[KQ 031] **Sub. Code : 1561**

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(New and Revised Regulations for 5 Years Course)

Branch II — Neuro Surgery

Part II

Paper I — NEUROANATOMY AND NEUROPHYSIOLOGY

Time : Three hours **Maximum : 100 marks**

Theory : Two hours and forty minutes **Theory : 80 marks**

M. C. Q : Twenty minutes **M.C.Q. : 20 marks**

Answer ALL questions.

I. Essay questions :

1. Discuss anatomy and pathophysiology of pain. (20)

2. Discuss the functional neuroanatomy of the basal ganglia. (15)

3. Describe the limbic system and outline the manifestations of its dysfunction. (15)

II. Short notes : (6 × 5 = 30)

(1) Cholinergic system

(2) Cerebral autoregulation

(3) Saltatory conduction

(4) Trigemino vascular system

(5) Medial longitudinal fasciculus

(6) Lateral geniculate body.

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[KR 031] **Sub. Code : 1561**

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(New and Revised Regulations for 5 Years Course)

Branch II — Neuro Surgery

Part II

Paper I — NEUROANATOMY AND NEUROPHYSIOLOGY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Essay questions :

(1) Describe the anatomy and physiology of cerebral circulation. (20)

(2) Describe anatomy of brachial plexus. (15)

(3) Discuss the neural control of urinary bladder. (15)

II. Short notes : (6 × 5 = 30)

(a) Development of craniovertebral junction

(b) Spasticity

(c) Cerebrospinal fluid circulation

(d) Generation of neuronal action potential

(e) Cerebral deep venous system

(f) REM sleep.

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[KS 031] **Sub. Code : 1561**

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(New and Revised Regulations for 5 Years Course)

Branch II — Neuro Surgery

Part II

Paper I — NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code : 181561

Time : Three hours Maximum : 100 marks

Answer ALL questions.

I. Essay questions : (2 × 20 = 40)

(1) Describe the functional neuroanatomy of the frontal lobes and discuss the frontal lobe dysfunction.

(2) Describe functional neuroanatomy of the cerebellum.

II. Short notes : (10 × 6 = 60)

1. Basal Cisterns.
2. Acetylcholine.
3. Synapse.
4. Axonal transport.
5. Notochord.
6. Muscle spindle.
7. Substantia nigra.
8. Third ventricle.
9. Deep venous system.
10. Oculomotor nucleus.

August 2009

[KV 031] **Sub. Code: 1561**

MASTER OF CHIRUGIAE (M.Ch.) DEGREE EXAMINATIONS

(Super Specialities)

(New and Revised Regulations for 5 years course)

(Candidates admitted upto 2004-2005)

Branch II – NEUROSURGERY

PART - II

Paper I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

Time: Three hours **Maximum: 100 Marks**

Answer ALL questions

Draw suitable diagrams wherever necessary.

I. Essays: **(2 x 20 = 40)**

1. Discuss the anatomy of the cerebellopontine angle.
2. Discuss the formation, circulation and functions of cerebrospinal fluid.

II. Write short notes on: **(10 x 6 = 60)**

1. Corpus Callosum.
2. Optic chiasma.
3. Blood supply of internal capsule.
4. Floor of 4^{th} ventricle.
5. Innervation of urinary bladder.
6. Action potential.
7. Maintenance of muscle tone.
8. Neuro muscular junction.
9. Functions of basal ganglia.
10. Cerebellar control of gait.

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August 2011

[KZ 031] **Sub. Code: 1561**

MASTER OF CHIRUGIAE (M.Ch.) DEGREE EXAMINATION
(SUPER SPECIALITIES)

BRANCH II – NEURO SURGERY

NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

Time : 3 hours (180 Min) **Maximum : 100 marks**

Answer ALL questions in the same order.

I. Elaborate on :	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. Discuss the limbic system and its clinical significance.	11	35	15
2. Discuss in detail the neurophysiology of speech and language functions.	11	35	15
II. Write notes on :			
1. Substantia nigra.	4	10	7
2. Thalamic nuclei.	4	10	7
3. Microglia.	4	10	7
4. Sylvian fissure.	4	10	7
5. Optic peduncle.	4	10	7
6. Muscle spindle.	4	10	7
7. Myoneural junction.	4	10	7
8. Embryology of the vertebral body.	4	10	7
9. Gastrulation.	4	10	7
10. Central canal of spinal cord and its significance in Syringomyelia.	4	10	7

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[LB 031] **AUGUST 2012** **Sub. Code: 1561**

M.Ch – NEURO SURGERY

FIVE YEARS COURSE – PART II

Paper – I NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

Time : 3 hours **Maximum : 100 marks**

(180 Min)

Answer ALL questions in the same order.

I. Elaborate on:	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. Discuss the anatomy of the adenohypophysis and neurohypophysis.	16	35	15
2. Discuss the anatomy of the thalamus. What are the neural connections relevant to movement disorders.	16	35	15

II. Write notes on:

1. Describe the anatomy and physiology of the monosynaptic stretch reflex.	4	10	7
2. Draw a diagram demonstrating the anatomical substrates in the vestibuloocular reflex.	4	10	7
3. What are the afferent and efferent tracts contained in the inferior cerebellar peduncle?	4	10	7
4. Describe the parts of the posterior inferior cerebellar artery and the components of a PICA syndrome.	4	10	7
5. Draw a diagram showing the blood supply to the various parts of the internal capsule.	4	10	7
6. Draw and label a section of the pons at the facial colliculus level.	4	10	7
7. Draw a diagram showing the neural control of urinary bladder function.	4	10	7
8. Draw the C5 and L5 vertebrae. What are the differences?	4	10	7
9. Draw and label a coronal diagram of the cavernous sinus with its dural reflections, nerves and arteries. Draw another diagram showing Parkinson's triangle.	4	10	7
10. Describe the course of the oculomotor nerve.	4	10	7

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[LC 031] **FEBRUARY 2013** **Sub.Code:1561**

M.Ch-NEUROSURGERY

THREE YEARS COURSE – PART –I

Paper – I NEUROANATOMY & NEUROPHYSIOLOGY

Q.P. Code:181561

Time: 3 hours **Maximum :100 marks**
(180 Min)

I.Elaborate on: **(2x15marks=30marks)**

1. The Microscopic anatomy of a muscle Fiber and Muscle Spindle. Discuss the process of muscle contraction and the role of the muscle spindle.
2. The Factors which play a role in the control and Maintenance of normal Intracranial pressure. Describe the changes which occur in case of a gradually increasing space occupying lesion in the brain.

II.Write Notes on:- **(10x7marks=70marks)**

1. The Nuclei which contribute to the facial nerve
2. Thalamus- connections and lesions
3. Blood Brain Barrier
4. Importance of Caudate Nucleus
5. Anatomy of Third Ventricle
6. Acetyl Choline and its actions
7. Decorticate versus Decerebrate Rigidity
8. Blood Supply of Internal Capsule
9. Rods and Cones
10. Middle Cerebral Artery-Course and its importance

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(LD 031) **AUGUST 2013** **Sub. Code: 1561**

M.Ch. – NEURO SURGERY
THREE YEARS/FIVE YEARS/SIX YEARS COURSE – PART – I/PART – II
Paper – I NEUROANATOMY AND NEUROPHYSIOLOGY
Q.P.Code: 181561

Time: Three Hours **Maximum: 100 marks**

I. Elaborate on: **(2X15=30)**

1. Describe the anatomy of the third ventricle and its recesses.
2. Describe the anatomical pathways for the pupillary light reflex and accommodation. Add a note on the pathophysiology of light near dissociation.

II. Write notes on: **(10X7=70)**

1. Foramen of Monro.
2. Internal cerebral vein.
3. Ligaments of the atlanto axial joint.
4. Inferior cerebellar peduncle.
5. Supplementary motor area.
6. Spasticity.
7. Intracranial pressure volume curve.
8. Blood brain barrier.
9. Spinothalamic tract.
10. Monosynaptic stretch reflex.

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(LE 031) **FEBRUARY 2014** **Sub. Code: 1561**

M.Ch. – NEURO SURGERY
THREE YEARS/FIVE YEARS/SIX YEARS COURSE – PART – I/PART – II
Paper – I NEUROANATOMY AND NEUROPHYSIOLOGY
Q.P.Code: 181561

Time: Three Hours **Maximum: 100 marks**

I. Elaborate on: **(2X15=30)**

1. Describe the anatomy of the floor of the fourth ventricle and its importance in surgical approaches.

2. Describe the pathway for perception of pain.

II. Write Notes on: **(10X7=70)**

1. Draw a labelled diagram of the coronal section of the cavernous sinus.
2. Brachial plexus.
3. Abducens nerve.
4. Innervation of urinary bladder.
5. Ligamentum flavum.
6. Broca's area.
7. Cushing's reflex.
8. Frontal eye field.
9. Subthalamic nucleus.
10. Foramen magnum.

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[LF 031] **AUGUST 2014** **Sub. Code: 1561**

M.Ch. – NEURO SURGERY

THREE YEARS / FIVE YEARS / SIX YEARS COURSE

PART – I / PART – II

Paper I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q. P. Code: 181561

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

Answer ALL questions in the same order.

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

1. Discuss the hypothalamic –pituitary axis in detail.
2. Discuss the deep venous system of the brain.

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

1. Parapontine reticular formation.
2. Relative afferent pupillary defect.
3. Rigidity.
4. Tentorial incisura.
5. Diaphragma sella.
6. Liliequist membrane.
7. Circumventricular organs.
8. Supplementary motor area.
9. Amygdala.
10. Floor of anterior third ventricle.

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[LH 031] **AUGUST 2015** **Sub. Code: 1561**

M.Ch. – NEURO SURGERY

SIX YEARS COURSE

PART – II

PAPER I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

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

1. Describe the anatomy of second cranial nerve and draw diagrams of field defects of lesions at various levels of the path way.

2. Describe the neuronal control of respiration and various types of respiratory patterns.

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

1. Papez circuit.

2. Diagram of cross section of medulla oblongata at the level of sensory decussation.

3. Conditioned reflex.

4. Sylvian fissure.

5. Anomalies of circle of Willis.

6. Implicit and explicit memory.

7. Notochord.

8. Video electro encephalogram.

9. Wallerian degeneration.

10. Sleep patterns.

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(LJ 031) AUGUST 2016 **Sub. Code: 1561**

M.Ch. – NEURO SURGERY

SIX YEARS COURSE

PART – II

Paper I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P.Code: 181561

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

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

1. Surgical anatomy of the III ventricle and its neurovascular relationship.
2. Innervation of bladder and types of neurogenic bladder.

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

1. Association fibres of cerebrum.
2. Veins of posterior fossa.
3. Fornix.
4. Neurulation.
5. Insular cortex.
6. Intracranial pressure.
7. Myelination.
8. Pyramidal pathway.
9. Functions of parietal lobe.
10. Antidiuretic hormone.

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(LL 031) AUGUST 2017 **Sub. Code: 1561**

M.Ch. – NEURO SURGERY

SIX YEARS COURSE

PART – II

Paper I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P.Code: 181561

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

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

1. Discuss the anatomy of floor of fourth ventricle and its importance in surgical approaches.

2. Discuss the connections of cerebellum and its role in maintaining tone, posture and coordination of the body.

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

1. Foramen of Magendie and Luschka.
2. Hyponatremia.
3. Recurrent artery of Heubner.
4. Insular lobe.
5. Diabetes insipidus.
6. Meckel's cave.
7. Monosynaptic stretch reflex.
8. Tentorial incisura.
9. Anatomy of the temporal horn.
10. Middle cerebellar peduncle.

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(LM 031) FEBRUARY 2018 **Sub. Code: 1561**

M.Ch. – NEURO SURGERY

SIX YEARS COURSE

PART – II

Paper I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P.Code: 181561

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

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

1. Describe the anatomy of Trigeminal nerve.
2. Describe the perception and pathways of touch.

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

1. Enumerate the cranial foramina and structures passing through each one.
2. Intracranial pressure monitoring.
3. Pituitary apoplexy.
4. Muscle spindle.
5. Nerve injuries.
6. Corneal reflex.
7. Draw labeled diagram of cross section through upper pons.
8. Posterior communicating artery.
9. Blood brain barrier.
10. Encephalocele.

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(LN 031) AUGUST 2018 **Sub. Code: 1561**

M.Ch. – NEURO SURGERY

SIX YEARS COURSE

PART – II

Paper I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P.Code: 181561

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

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

1. Discuss the anatomy of blood brain barrier and its neurosurgical importance.

2. Describe the physiology of cerebrospinal fluid and its circulation.

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

1. Choroidal fissure.
2. Optic chiasma.
3. Porus acousticus.
4. Arterial supply of spinal cord.
5. Ligamentous complex of craniovertebral junction.
6. Babinski sign.
7. Functions of microglia.
8. Neuromuscular junction.
9. Extra ocular movements.
10. Functions of frontal lobe.

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(LP 031) AUGUST 2019 **Sub. Code: 1561**

M.Ch. – NEURO SURGERY

SIX YEARS COURSE

PART – II

Paper I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

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

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

1. Describe the neurophysiology of urinary bladder.
2. Describe the vascular anatomy (arterial and venous) of spinal cord.

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

1. Ventricles of brain.
2. Foramen magnum.
3. Draw labeled diagram of cross section of mid thoracic spinal cord.
4. Internal capsule.
5. Cerebello pontine angle.
6. Structure outside the blood brain barrier.
7. Parietal lobe syndromes.
8. Cauda equine.
9. Brain herniations.
10. Taste sensation.

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(LQ 031) FEBRUARY 2020 **Sub. Code: 1561**

M.Ch. – NEURO SURGERY

SIX YEARS COURSE

PART – II

Paper I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

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

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

1. Describe the various Nuclei of Thalamus and their connections.
2. Discuss the supra nuclear control of eye movements.

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

1. CSF production and absorption and their measurement.
2. Regulation of muscle tone.
3. Functional organization of cerebellum.
4. Pressure - volume response in intracranial pressure.
5. Cross - section of Pons at level of Facial colliculus.
6. Blood supply of Internal capsule.
7. Embryology of cranio-vertebral junction.
8. Auto regulation of cerebral blood flow.
9. Classification of peripheral nerve fibres.
10. Physiology of memory.

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(MCH 0821) AUGUST 2021 **Sub. Code: 1561**

M.Ch. – NEURO SURGERY

SIX YEARS COURSE

PART – II

Paper I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

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

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

1. Discuss the anatomy of the cavernous sinus and the surgical relevance of the cavernous sinus triangles.
2. Describe the visual pathway and the localization of its lesions.

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

1. Pain pathway.
2. Neural tube defects.
3. Dysphasias.
4. Foramen of Monroe.
5. Cisterns of the brain.
6. Brainstem auditory evoked potentials.
7. The nuclei of the fifth cranial nerve.
8. Rhomboid fossa.
9. Cushing's reflex and its application in neurosurgery.
10. Cerebral edema.

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

[MCH 0222] FEBRUARY 2022 **Sub.Code :1561**

M.Ch. – NEURO SURGERY

SIX YEARS COURSE

PART – II

Paper I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

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

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

1. Elaborate on Dural Venous Sinus and Microanatomy of Cavernous sinus and applied anatomy of both.

2. Describe in detail about physiological circuits in BASAL GANGLIA and how it controls the muscular tone and motor activity.

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

1. Classifications of Nerve fibre and add a note on Erlanger – Gasser classification.
2. Sensory Receptors.
3. Broadmann's Area.
4. Organ of Corti.
5. Physiology of sleep.
6. Blood supply of Cerebellum.
7. Acending and Decending tracts of spinal cord.
8. Relative Afferent Pupillary Defect: (RAPD).
9. Structures passing through internal capsule.
10. Limbic Circuits.

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

(MCH 0822) **AUGUST 2022** **Sub. Code: 1561**

M.Ch. – NEURO SURGERY

SIX YEARS COURSE

PART – II

Paper I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

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

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

1. Anatomy and microsurgical anatomy of the fourth ventricle.
2. Connections and functions of thalamus.

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

1. Ulnar nerve.
2. Olfaction.
3. Horizontal gaze.
4. Posterior Inferior Cerebellar Artery.
5. Typical Cervical Vertebra.
6. Cross section at the level of upper midbrain.
7. Blood supply of Internal Capsule.
8. Primary Neurulation.
9. Pineal gland.
10. Adenohypophysis.

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

(MCH 0223) **FEBRUARY 2023** **Sub. Code: 1561**

M.Ch. – NEURO SURGERY

SIX YEARS COURSE

PART – II

PAPER I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

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

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

1. Microsurgical anatomy of cerebellopontine angle.
2. Anatomy and physiology of hypothalamus**.**

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

1. Blood supply of spinal cord.
2. Oculomotor nerve nuclei.
3. Atlanto-axial joint.
4. Cross section at the level of dorsal cord.
5. Secondary Neurulation.
6. Neurohypophysis.
7. Bradley's loop I and II.
8. Papez circuit.
9. Cerebrospinal fluid.
10. Commissural fibres.

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

(MCH 0124) **JANUARY 2024** **Sub. Code: 1561**

M.Ch. – NEURO SURGERY

SIX YEARS COURSE

PART – II

PAPER I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

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

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

1. Enumerate the neural supply to urinary bladder.
2. Enumerate the dural layers, contents, and triangles of cavernous sinus.

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

1. One and half syndrome.
2. Cisterns of the brain.
3. Brainstem Auditory Evoked Potentials.
4. Blood brain barrier devoid regions.
5. Spinal reflex arc.
6. Crossed hemiplegia.
7. Typical neuron.
8. Motor evoked potential.
9. H-wave and F reflex.
10. Egaz Moniz.

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

(MCH 0225) **FEBRUARY 2025** **Sub. Code: 1561**

M.Ch. BRACH II – NEURO SURGERY

SIX YEARS COURSE

PART – II

PAPER I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

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

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

1. Draw a neat, labelled diagram of the spinal cord at the midcervical region and enumerate the anatomical basis of the various spinal cord syndromes.

2. Trace the course of the Facial Nerve with labelled diagrams as necessary and describe the localization of its lesions.

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

1. Medial Longitudinal Fasciculus.

2. Brainstem Auditory Evoked Response.

3. Recesses of the third ventricle.

4. Stretch reflex.

5. Functions of the hypothalamus.

6. Dissociative Language Syndromes.

7. Blood Brain Barrier.

8. Enumerate the differences between conductive and sensory neural deafness.

9. Physiological regulation of anterior pituitary function.

10. Modalities of Intra operative Neuro Monitoring.

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

(MCH 0825) **AUGUST 2025** **Sub. Code: 1561**

M.Ch. BRANCH II – NEURO SURGERY

SIX YEARS COURSE

PART – II

PAPER I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

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

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

1. Embryological Anatomy of Cranio vertebral junction in relation to Cranio vertebral junction anomalies.
2. Discuss in detail about Cerebro spinal fluid production and circulation in relation with Hydrocephalus.

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

1. Ligamentum Denticulatum and its surgical significance.
2. Oculomotor nerve.
3. Basal cisterns.
4. Conus medullaris.
5. Intracranial course of Internal Carotid artery.
6. Urinary bladder innervation.
7. Motor unit and Electro myography.
8. Interpretation of Electro Encephalography.
9. Regulation of body temperature by hypothalamus.
10. Synaptic transmission.

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

(MCH 0126) **JANUARY 2026** **Sub. Code: 1561**

M.Ch. - NEURO SURGERY

SIX YEARS COURSE

PART – II

PAPER I – NEUROANATOMY AND NEUROPHYSIOLOGY

Q.P. Code: 181561

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

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

1. Anatomy, Applied anatomy and Physiology of superficial and Deep Venous system of Brain.

2. Gross and microsurgical anatomy of fourth ventricle.

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

1. Olfaction.
2. Neural control of water balance.
3. Internal capsule.
4. Surface anatomy & applied anatomy of central sulcus.
5. Pursuit and Saccades.
6. Hypophyseal portal system.
7. Cortical sensation.
8. Pterion.
9. Dorsal vertebra
10. Ascending tracts of spinal cord.

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