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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(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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