

POST-DOCTORAL DEGREE EXAMINATION – JULY 2026

M.Ch. NEUROSURGERY

Time: 3 Hours

Max. Marks: 100

PAPER – I

Q.P. Code: 1521

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

ESSAY QUESTIONS:

10 X 10 = 100

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| 1. Differentiate between conductive and sensory-neural hearing loss. Discuss the causes of sensory neural hearing loss. | (5+5) |
| 2. Describe embryogenesis and neuroendocrinology of pituitary gland. | (5+5) |
| 3. Describe the clinical syndrome of Diabetes Insipidus (DI). Add a note on diagnostic modalities of central and peripheral DI. | (5+5) |
| 4. Describe the anatomy of CP angle cistern. Discuss in detail its blood supply. | (5+5) |
| 5. Describe in detail optic nerve pathway and the visual field defects seen in supra-cellular tumour. | (5+5) |
| 6. Discuss the physiological basis of Spasticity and its treatment modalities. | (5+5) |
| 7. What are the various electrodiagnostic studies used in neurology? Explain brainstem auditory evoked responses. | (5+5) |
| 8. Which are the various transport systems of the blood brain barrier? Describe in detail regarding transport via protein carriers. | (5+5) |
| 9. Describe the anatomy of Insula. Discuss in detail its blood supply. | (5+5) |
| 10. What are the differential diagnosis of papillaedema? Discuss neurosurgical causes of papillaedema. | (5+5) |

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Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number**Marks****ESSAY QUESTIONS:****10 X 10 = 100**

1. Discuss the types, etiopathogenesis and management of congenital torticollis. (3+2+5)
2. What are the molecular subgroups of Medulloblastoma? Describe the characteristic radiological findings of Medulloblastoma on MRI and CT. (5+5)
3. Discuss the etiology and management of cervical radicular pain in a 60 year old diabetic male patient. (3+7)
4. Outline the characteristic skull deformities associated with the premature closure of specific sutures (craniosynostosis). Discuss its management. (4+6)
5. A 30 year old HIV positive male is diagnosed of dorsal D9-10 tubercular epidural abscess with bony involvement. Discuss the management of this case.
6. What are the characteristic MRI findings that differentiate high-grade gliomas (e.g., glioblastoma) from low-grade gliomas.
7. With the help of neat labeled diagram, mention the anatomical subtypes of ossification of posterior longitudinal ligament (OPLL). Add a note of the surgical approaches. (4+6)
8. What is a growing skull fracture and how does it differ from a typical linear skull fracture? Discuss the typical signs / symptoms and management of growing skull fracture. (4+6)
9. Illustrate and describe the anatomical causes of degenerative lumbar canal stenosis. Add a note on its management. (5+5)
10. Discuss the types, etiopathogenesis and management of thoracic traumatic fractures. (3+2+5)

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Max. Marks: 100

PAPER – III

Q.P. Code: 1523

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

ESSAY QUESTIONS:

10 X 10 = 100

1. Discuss the etiopathology, clinical features and management of slit ventricular syndrome. (4+4+2)
2. Discuss the clinical features, diagnosis and management of Neurocysticercosis. (3+4+3)
3. Discuss the CT& MRI criteria for hydrocephalus. (5+5)
4. Discuss the indications, technique and outcomes of selective amygdalo hippocampectomy. (4+4+2)
5. Discuss the anatomy, physiology and disorders of Basal ganglia. (4+3+3)
6. Discuss the role of hyperbaric oxygen in management of TBI. Add a note on the mechanism and action of hypothermia, cooling methods and outcomes. (4+6)
7. Discuss Brain Trauma Foundation Guidelines for management of brain injury.
8. Discuss the indications, techniques, normal values and drawbacks of Transcranial Doppler.
9. Discuss the clinical features, classification, natural history and management of Arteriovenous malformations of the brain.
10. Discuss the causes of secondary brain damage and their management.

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PAPER – IV

Q.P. Code: 1524

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

ESSAY QUESTIONS:

10 X 10 = 100

1. Discuss principles & applications of MR spectroscopy in diagnosis of different neurosurgical conditions. (5+5)
2. Classify CNS tumours (Latest WHO Classification). Describe Targeted therapy for brain tumours. (7+3)
3. Discuss the indications and methods of Hearing preservation in vestibular Schwannoma surgery. (5+5)
4. Describe the types & application of proliferation markers in brain tumor. (5+5)
5. Discuss the methodology and applications of image guided neurosurgery. (5+5)
6. Discuss the principles and application of Proton Beam Radiotherapy in Neurosurgery. (5+5)
7. Discuss the principles, techniques and applications of Functional MRI in Neurosurgery. (4+3+3)
8. Enumerate the agents used, dosage, indications and complications of Intraventricular thrombolytic therapy. (2+2+3+3)
9. What are newer antiepileptic drugs? Describe the mechanism of action and side effects of Lacosamide. (5+5)
10. Discuss the principles, indications and limitations of Balloon kyphoplasty. (4+3+3)
