

**QP Code:104505**

**Reg. No.:.....**

**M.Ch. (Neuro Surgery) Degree Supplementary Examinations June 2026**

**Paper IV – Recent Advances**

**Time: 3 hrs**

**Max marks: 100**

- *Answer all questions to the point neatly and legibly* • *Do not leave any blank pages between answers* • *Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together* • *Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

**Essay:**

**(20)**

1. Discuss the role of minimally invasive techniques in modern neurosurgery. Include recent tools and their advantages.

**Short essays:**

**(8x10=80)**

2. Intraoperative ultrasound in brain tumor surgery.
3. Fluorescence-guided surgery (e.g., using 5-ALA) in glioma resection.
4. Different implant materials and 3D printing in cranial reconstruction.
5. Intraoperative CT or MRI help during neurosurgical procedures.
6. What is connectome-based surgery and how is it being applied in glioma resections.
7. Summarize the key updates in the latest WHO classification of central nervous system tumors, including molecular markers and grading changes.
8. What is Proton Beam Therapy. Discuss its physical principles, indications, and advantages over conventional radiotherapy in CNS tumors.
9. Cerebral Micro dialysis.

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