

QP Code:104505

Reg. No.:.....

**M.Ch. (Neuro Surgery) Degree Regular/Supplementary Examinations  
November 2023**

**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. Robotics in neurosurgery

**Short essays: (8x10=80)**

2. Near Infra-Red Spectroscopy (NIRS)

3. Radiofrequency in neurosurgery

4. Tractography

5. Stem cells in neurosurgery

6. Intraoperative MRI

7. DBS and subthreshold cortical stimulation

8. Intraoperative ultrasound in neurosurgery

9. Cryo and laser ablation in neurosurgery

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