

Scope of Knowledge for Master of Neurosurgery MedEx.

The entrance examination consists of 50 questions.

- a. 25 questions in Single Best Answer format
- b. 25 questions in True-False format. There is no minus marking.

The duration of the examination is 60 min.

The examination will cover

- a. Principles and General Sciences in Neurosurgery
- b. Principles and General Surgery Sciences

A) Principles and General Surgical Sciences

1. Prophylaxis of thromboembolic disease
2. Surgery in Hepatitis and HIV carries – special precaution
3. Pain control, Pathophysiology of pain- Differences between acute and chronic pain
4. Respiratory failure – Recognition and treatment
5. Assessment and maintenance of fluid and electrolyte balance
6. Blood Transfusion – Indication, hazard, complication, plasma substitutes
7. Surgically important micro-organisms / Principles of microbiological diagnosis
8. Septic shock – Pathophysiology and principle of management
9. The sources of surgical infection – Prevention and control
10. Principles of asepsis and antiseptic. Aseptic technique
11. Principles of sterilization
12. Skin preparation and antibiotic prophylaxis
13. Pathophysiology of the body response to infection
14. The Spleen – its role in health and disease: Splenectomy and hypersplenism
15. Local and ligature material
16. Principles of Incision and their closure
17. Diathermy – Principles and precaution
18. Disorders of coagulation and haemostatic
19. Pathophysiology of wound healing – Classification of surgical wounds, Principles of wound management
20. Complications of wound healing – wound dehiscence, scars and contracture

21. Principle and techniques of biopsy and cytological sampling
22. Haemorrhage and shock
23. Respiratory failure – Pulmonary Oedema: ‘Shock Lung’, ARDS, Labour and Pulmonary Collapse
24. Acute Renal failure in surgical patients
25. Carcinogenesis: Principles of molecular biology of cancer and genetic factors
26. Benign and malignant neoplasm’s and mechanisms of metastases
27. Epidemiology of common cancers: Principles of screening and principles of treatment
28. Surgical aspects of disordered hemopoiesis and haemolytic disorders of surgical importance
29. Haemorrhagic disorders: Disorders of coagulation
30. Immune response to trauma, infection and tissue
31. Principle of research, design and analysis of clinical trials
32. Post-operative pulmonary and non-pulmonary complications
33. Principle of wounds drainage and wound dressings
34. Diagnostic and therapeutic uses of radioisotopes
35. Monoclonal antibodies and their application clinical practice
36. Tumour markers in surgical practice – Uses and limitations
37. Electromechanical hazards in the operating room
38. Patient’s safety in the operating room – Precautions in the anaesthetised patients
39. Metabolic response to trauma / surgery
40. Malnutrition in surgical patients
41. Acid-base homeostasis and disturbance in the acid-base balance- Principles of management
42. Principles of transplantation / Advances, uses and limitations

B) Principles and General Sciences in Neurosurgery

1. Neuroanatomy
2. Neurophysiology
3. Basic neurophysiology of pain, spasticity etc
4. Neurochemistry

5. Neuropathology
6. Basic in clinical neurology – Localization and neurophysiological studies
7. Basic in neurodiagnostic and neuroinvestigations
8. Basic principles in neurosurgery – Haemostasis, wounds in neurosurgery, sutures, etc
9. Basic component in vascular, tumor, congenital malformation, spine, functional, trauma neurosurgery