

नेपाल सरकार
गृह मन्त्रालय
प्रहरी प्रधान कार्यालय
(मानवश्रोत एवं प्रशासन विभाग, भर्ना छनौट महाशाखा)
नक्साल, काठमाण्डौ ।

प्राबिधिक प्रहरी नायव उपरीक्षक (चिकित्सक) न्यूरो सर्जन (MS Neuro Surgery) समूहको खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम ।

पाठ्यक्रमको रूपरेखा:- यस पाठ्यक्रमको आधारमा निम्नानुसार दुई चरणमा परीक्षा लिईने छ :-

प्रथम चरण:- लिखित परीक्षा (Written Examination)

पूर्णाङ्क :- २५०

द्वितीय चरण:- अन्तरवार्ता (Interview)

पूर्णाङ्क :- ३५

प्रथम चरण:- लिखित परीक्षा योजना (Examination Scheme)

Paper	Subject	Part	Marks	Full Marks	Pass Marks	No. and Weight of Question	Time
प्रथम	Hospital Administration, Management and General Health Issues	I-Hospital Administration and Management	10	50	20	5X2=10 (Short Answer)-1	2.00 hrs.
		II- General Health Issues	40			2X15=30 (Long Answer) 1X10=10 (Long Answer)	
द्वितीय	Service Specific	I-General Subject	25	150	60	1X15=15 (Critical Analysis) 1X10=10 (Long Answer)	4.00 hrs
		II- Technical Subject	125			4X20=80 (Critical Analysis) 3X15=45 (Problem Solving)	
तृतीय	नेपाल प्रहरी सेवा सम्बन्धी	नेपाल प्रहरी सेवा सम्बन्धी	१०	५०	२०	बस्तुगत बहुउत्तर $१० \times १ = १०$	१ घण्टा १० मिनेट
			४०			विषयगत लामो उत्तर $१ \times १० = १०$ छोटो उत्तर $६ \times ५ = ३०$	

द्वितीय चरण (Second Phase):-

परीक्षाको किसिम	पूर्णाङ्क	परीक्षा प्रणाली
व्यक्तिगत अन्तरवार्ता	३५	मौखिक

द्रष्टव्य:

- १) लिखित परीक्षाको प्रश्नहरू अंग्रेजी भाषामा हुनेछन् र उत्तर लेख्दा नेपाली वा अंग्रेजी अथवा नेपाली अंग्रेजी दुवै भाषामा लेख्न सकिनेछ ।
- २) पाठ्यक्रममा भएका यथासम्भव सबै पाठ्यांशहरूबाट प्रश्न सोधिनेछन् ।
- ३) बस्तुगत बहुउत्तर (Multiple Choice) प्रश्नहरूको उत्तर सही दिएमा प्रत्येक सही उत्तर बापत पुरा अङ्क प्रदान गरिनेछ भने गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २०% अङ्क कट्टा गरिनेछ । तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन ।
- ४) प्राविधिक प्रहरी नायब उपरिक्षकहरूको खुल्ला प्रतियोगिताको प्रथम पत्रको परीक्षा सबै उपसमुहलाई संयुक्त रूपमा एकै प्रश्नपत्रबाट एकैदिन हुनेछ ।
- ५) द्वितीय पत्रको परीक्षा समुह/उपसमुह अनुसार छुट्टाछुट्टै एकैदिन हुनेछ ।
- ६) तृतीय पत्रको परीक्षा सबै उपसमुहहरूलाई संयुक्त रूपमा एकै प्रश्नपत्रबाट एकैदिन हुनेछ ।
- ७) प्रथम पत्रको Part I को उत्तर पुस्तिका एउटा मात्र हुनेछ भने Part I र द्वितीय पत्रको दुवै Part का लागि प्रत्येक प्रश्नको उत्तरपुस्तिकाहरू छुट्टाछुट्टै हुनेछन् ।
- ८) यस पाठ्यक्रममा जे सुकै लेखिएको भएतापनि पाठ्यक्रममा परेका ऐन, नियमहरू, परीक्षाको मितिभन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधित भई हटाइएका वा थप गरी संशोधित भई कायम रहेका) लाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
- ९) अन्तरवार्ताको अंकभार सम्बन्धमा प्रहरी सेवाको पदमा नियुक्ति र वढुवा गर्दा अपनाउनु पर्ने सामान्य सिद्धान्त, २०६९ को अनुसूची-१९ मा ब्यबस्था भए बमोजिम हुनेछ ।
- १०) पाठ्यक्रम लागू मिति:- २०७८/०५/०१ गते ।

प्राविधिक प्रहरी नायव उपरीक्षक (चिकित्सक) कन्सल्टेन्ट न्यूरो सर्जन (MS Neuro Surgery) पदको खुला
प्रतियोगितात्मक परीक्षाको प्रथम पत्रको पाठ्यक्रम

Paper I: Hospital Administration, Management and General Health Issues

Part I: Hospital Administration and Management

- 1. Introduction to Management**
 - 1.1 Management Process
 - 1.2 Managerial Roles & Skills
 - 1.3 Nature of Managerial work
- 2. Environmental Context**
 - 2.1 The external environment
 - 2.2 The internal environment
 - 2.3 Organizational Culture
 - 2.4 Organization environmental Relationship
 - 2.5 Environmental – organizations effectiveness
- 3. Managing Interpersonal & Communication**
 - 3.1 Interpersonal nature of Organization
 - 3.2 Forms of Communication
 - 3.3 Managing Organizational Communication
- 4. Planning & Organizing**
 - 4.1 Planning process
 - 4.2 Organizational goal
 - 4.3 Kinds of Organizational Plans
 - 4.4 Time frames for planning
- 5. Concept of Hospital Planning**
 - 5.1 Information and concept of Hospital planning
 - 5.2 Guiding Principles in Planning Hospital facilities & services
 - 5.3 Concept of Hospital unitization and its influencing factor
 - 5.4 Master plan
- 6. Background of Hospital**
 - 6.1 Distinguishing Characteristics of Hospital
 - 6.2 Complexities of Hospital
 - 6.3 Organogram of the Hospital
 - 6.4 Governing Board and its functions
- 7. Quality / Customer Service and Measuring Quality**
 - 7.1 Define Customer and Identify Customers
 - 7.2 Domains of Quality
 - 7.3 Customer Experience: Core Service & Delivery of Service
 - 7.4 Excellent Customer Service; Caring Service
 - 7.5 Individual Behavior: Stress, Communication and Interpersonal Relationship
- 8. Patient Satisfaction and Quality Audit**
 - 8.1 Setting Objectives and Agreeing upon Standards
 - 8.2 Assessment of Patient Satisfaction
 - 8.3 Feedback: Customers, Staff, Suppliers etc.
 - 8.4 Quality Audit and Review Techniques
- 9. Hospital Store, Planning & Distribution**
 - 9.1 Definitions, Objectives, Importance
 - 9.2 Material cycle

9.3 Integrative Material Management

9.4 Factors Affecting & types for distribution

10. Miscellaneous

10.1 Problem solving & decision making models

10.2 Procurement, Receipt & Inspection in Hospital store

10.3 Equipment planning, selection, utilization

10.4. Import, maintenance & Audit of Hospital Equipments

Part II: General Health Issues

1. National Health Policy, 2016
2. Guideline for Health Institutions Established Upgrade standard, 2010 (Updated Version)
3. Health and Human Right including Women's Right, Children's Right, Professional's Right, Client Right and Informed Consent
4. Gender Issues and Health
5. International Health Agencies: Role and Responsibilities of WHO, UNICEF, UNFPA and Interagency Relationships
6. Professional Council and Related Regulations
7. Medical Ethics
8. Health Management Information System (HMIS)
9. Health Insurance and Financing in Health Care
10. Continue medical Education (CME)

प्राविधिक प्रहरी नायव उपरीक्षक (चिकित्सक) कन्सल्टेन्ट न्यूरो सर्जन (MS Neuro Surgery) पदको खुला
प्रतियोगितात्मक परीक्षाको द्वितीय पत्रको पाठ्यक्रम ।

Paper II: Service Specific

Part I: General Subject

1. Innovations in Medical Education

- 1.1 Principles of adult learning and approaches to learning
- 1.2 Construction task analysis process, concepts and steps
- 1.3 Components, types and models of curriculum
- 1.4 Principles of curriculum development
- 1.5 Different existing and innovative methods of teaching and learning
- 1.6 Components of lesson plan
- 1.7 Principles, preparation and use of audio-visual aids and effectively use commonly available teaching learning materials
- 1.8 Principles and approaches to supervision
- 1.9 Counsel the candidate/patient using modern concepts and approaches of counseling
- 1.10 Explain concepts of skill laboratory

2. Medical Ethics

- 2.1 Principles of medical ethics, professionalism, code of conduct and etiquette, medical negligence, infamous conduct and misconduct
- 2.2 Autonomy, informed consent, confidentiality, truth telling and disclosure
- 2.3 Ethical dilemmas being faced by neurosurgeons
- 2.4 Ethical concerns arising out of doctors practicing in health institutions
- 2.5 Discuss ethical aspects of treating patients with HIV/AIDS
- 2.6 Essential ethical issues in child care
- 2.7 Discuss ethical issues while dealing with other allied medical specialties

3. Communication Skills

- 3.1 Application of core communication skills: Initiate the session, Identify the reason(s) for consultation, Gather information from the patient, Provide structure to the consultation, Build relationship with the patient, Explain and build patient centered treatment planning and Close the session
- 3.2 Discuss communication skills required in special circumstances: Deal with people from different social backgrounds, Communicate with the children, Communicate during the procedures, Break bad news and Deal with other health professionals or team members in multidisciplinary team

4. Research Methodology

- 4.1 Health science research and research process
- 4.2 Institutional review board functioning
- 4.3 Plan and conduct research work
- 4.4 Writing paper for journals and critical review on scientific articles
- 4.5 Impact factor
- 4.6 Evidence based medicine
- 4.7 Basic medical statistics

5. Institutional Management

- 5.1 Different ways of starting a practice of neurosurgery
- 5.2 Financial management for individual practice
- 5.3 Discussion on fees, fee setting and financial policy
- 5.4 Appointment scheduling strategies
- 5.5 Employment law of the country
- 5.6 Management of staff and conduction of staff meetings

6. Organization of faculty and department

- 6.1 Importance of hierarchy in the surgical specialty
- 6.2 Roles of different members in the group

7. Current national health statistics related to neurosurgery and neurosurgical diseases

8. Basic & Applied

- a) Applied Surgical Anatomy
 - i) Required to have acknowledge of the structure and function of all system of the body where applicable to common clinical conditions
 - ii) Knowledge of histology to understand the function to tissue and organs as well as growt, degeneration and repair
 - iii) Embryological basic of those common congenital anomalies.

9. Applied Physiology

10. Surgical Pathology

- a) Knowledge of the principles of pathology and microbiology virology in context of surgery including inflammation, infection, neoplasm, response on the tissues to injury disturbance of growth, degeneration processes, repair and regulation.
- b) Immunology, Genetics
- c) Neoplastic diseases
- d) Pathology specimens and etc.
- e) Nervous system
- f) Respiratory system
- g) Cardiovascular system
- h) Genito-urinary system
- i) Gastrointestinal system
- j) Muscle skeletal system

11. Critical Case

- a) Emphasis on pathos physiological and fundamental surgical situation eg. Trauma, shock, organ failure, infection etc.
 - i) Clinical pictures
 - ii) Investigation
 - iii) Diagnosis confirmation
 - iv) Management – use of equipments
 - v) Monitoring – complications
 - vi) Counseling – communication
 - vii) Follow-up

12. Principles of Surgery

- a) Knowledge of the General principle of the practice of Surgery
 - i) Imaging techniques/interventional Radiology
 - ii) Endoscopy/Laproscopy

- iii) Surgery at extremes of life
- iv) Theatre techniques
 - (1) Aseptic techniques – sterilization
 - (2) Anaesthesia in general, maintenance of homeostasis
 - (3) Basic techniques – suturing material dressing plaster
 - (4) Diathermy
 - (5) Tourniquet
- v) Wound healing, dehiscence, scar, contractures
- vi) Post operative complication and management
- vii) Sepsis in surgery
 - (1) Acute and Chronic, inflammation
 - (2) Wound infection and septicemia
 - (3) Sp, infection, TB, Leprosy, AIDS, Bacterial infection
 - (4) Antiseptic, Antibiotic policies

13. Recent advance

- a) Research-inside country
- b) Recent advance – international
- c) Not published research work
- d) Future national vision

Part II: Technical subject

1. Basic Sciences

- 1.1. Anatomy
 - 1.1.1. Anatomy of brain and spinal cord
 - 1.1.2. Anatomy of scalp and skull
 - 1.1.3. Anatomy of spine
 - 1.1.4. Embryology of the nervous system
 - 1.1.5. Classification of nervous system
- 1.2. Physiology
 - 1.2.1. Physiology of CSF circulation
 - 1.2.2. CSF
 - 1.2.3. Pain mechanisms
- 1.3. Pathology and microbiology
 - 1.3.1. Basic and gross histopathological characteristics of brain tumors
 - 1.3.2. Organisms implicated in the CNS infections
 - 1.3.3. Principle of frozen section
- 1.4. Pharmacology
 - 1.4.1. Pharmacokinetics of antiepileptic drugs (AEDs)
 - 1.4.2. Dosage of commonly used AEDs.
 - 1.4.3. Use of mannitol / 3% sodium chloride and steroids in Neurosurgery
 - 1.4.4. Antibiotics in neurosurgery

2. General Clinical Neurosurgery

- 2.1. History of neurosurgery
- 2.2. Fluid, Electrolytes and Nutrition

- 2.3. General Critical Care
- 2.4. Preoperative and Postoperative Care
- 2.5. General principle of operative exposure in neurosurgery
- 2.6. Management of Infection
- 2.7. Basic Neuroanesthesiology
- 2.8. Basic Neuroradiology

3. Principles of Trauma Care

- 3.1. Pathophysiology of traumatic brain injury
- 3.2. Head Injury- Operative and Non-operative Management
- 3.3. Spinal Injury- Operative and Non-operative Management
- 3.4. Guidelines for management of neuro trauma

4. Cerebrovascular Surgery

- 4.1. Subarachnoid Hemorrhage (SAH) pre and postoperative management
- 4.2. Principles of Aneurysm and Arteriovenous Malformations (AVM) surgery
- 4.3. Spontaneous Intracerebral Hemorrhage (ICH) and Intraspinal Hemorrhage
- 4.4. Occlusive cerebrovascular disease

5. Neurosurgical Oncology

- 5.1. Investigations for Brain Tumors
- 5.2. Surgery for Brain Tumors
- 5.3. Principles of Chemo- and Radiotherapy
- 5.4. Sellar and parasellar tumors
- 5.5. Orbital tumors
- 5.6. Management of Spinal tumors (Intra and extramedullary)

6. Pediatric Neurosurgery

- 6.1. Hydrocephalus
- 6.2. Neural Tube Defects (NTD)
- 6.3. Chiari malformations
- 6.4. Dandy Walker malformations

7. Surgery of the Peripheral Nervous System

- 7.1. Management of Peripheral Nerve Injury
- 7.2. Carpal Tunnel Syndrome and Other Entrapment Neuropathies
- 7.3. Principles of Electromyography/Nerve Conduction Studies (EMG/NCT)

8. Spinal Surgery

- 8.1. Disc Herniations
- 8.2. Spinal Stenosis
- 8.3. Myelopathy
- 8.4. Spinal Exposures and instrumentation

9. Stereotactic and Functional Neurosurgery

- 9.1. Principles of Stereotactic and Functional Neurosurgery
- 9.2. Surgical therapy of movement disorders and epilepsy

10. Infections

- 10.1. Antimicrobial use
- 10.2. Acute bacterial meningitis
- 10.3. Parasitic and fungal infections

10.4. Principle of management of brain / spinal abscesses and empyemas

11. Pain

11.1. Management of Craniofacial pain syndromes

12. Recent advances in neurosurgery

-समाप्त-