

निजामती कर्मचारी अस्पताल
प्राविधिक सेवा, रेडियोलोजी समूह, रेडियो डाइग्नोसिस एण्ड इमेजीड उपसमूह, सिनीयर रजिष्ट्रार (स्पेशलिष्ट) पद, नवौं
तहको खुला तथा आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छ :

प्रथम चरण :- लिखित परीक्षा (Written Examination)

पूर्णाङ्क :- २००

द्वितीय चरण :- अन्तर्वार्ता (Interview)

पूर्णाङ्क :- ३०

१. प्रथम चरण (First Phase): परीक्षा योजना (Examination Scheme)

Paper	Subject		Marks	Full Marks	Pass Marks	No. Questions & Weightage	Time
I	General Subject	Part I: Management	50	100	40	6 × 5 = 30 (Short answer) 2 × 10 = 20 (Long answer)	3.00 hrs
		Part II: General Health Issues	50			6 × 5 = 30 (Short answer) 2 × 10 = 20 (Long answer)	
II	Technical Subject			100	40	4 × 15 = 60 (Critical Analysis) 2 × 20 = 40 (Problem Solving)	3.00 hrs

२. द्वितीय चरण (Second Phase)

Subject	Full Marks	Examination System
Interview	30	Oral

द्रष्टव्य :

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।
- अस्पतालको प्राविधिक सेवा अन्तर्गतका सबै समूह/सबै उपसमूहहरूको लागि प्रथमपत्रको पाठ्यक्रमको विषयवस्तु एउटै हुनेछ । तर द्वितीयपत्र Technical Subject को पाठ्यक्रम समूह/उपसमूह अनुरूप फरक फरक हुनेछ ।
- प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ । परीक्षामा सोधिने **प्रश्नसंख्या र अङ्कभार** यथासम्भव सम्बन्धित पत्र, विषयमा दिईए अनुसार हुनेछ ।
- वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरूको गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अङ्क कट्टा गरिनेछ । तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन ।
- वस्तुगत बहुवैकल्पिक हुने परीक्षामा परीक्षार्थीले उत्तर लेख्दा अंग्रेजी ठूलो अक्षर (Capital letter) A, B, C, D मा लेख्नुपर्नेछ । सानो अक्षर (Small letter) a, b, c, d लेखेको वा अन्य कुनै सङ्केत गरेको भए सबै उत्तरपुस्तिका रद्द हुनेछ ।
- बहुवैकल्पिक प्रश्नहरू हुने परीक्षामा कुनै प्रकारको क्याल्कुलेटर (Calculator) प्रयोग गर्न पाइने छैन ।
- विषयगत प्रश्नहरूको हकमा एउटै प्रश्नका दुई वा दुई भन्दा बढी भाग (Two or more parts of a single question) वा एउटा प्रश्न अन्तर्गत दुई वा बढी टिप्पणीहरू (Short notes) सोध्न सकिने छ ।
- विषयगत प्रश्नमा प्रत्येक पत्र/विषयका प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन् । परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डका उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
- यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भएतापनि पाठ्यक्रममा परेका कानून, ऐन, नियम, विनियम तथा नीतिहरू परीक्षाको मितिभन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
- प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
- पाठ्यक्रम लागू मिति :

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Paper I: General Subject
Part I: Management
(6 × 5) + (2 × 10) = 50 Marks

1. Management

- 1.1. Health care management system in Nepal and other parts of the world
- 1.2. Fundamental principles of healthcare institution and hospital management.
- 1.3. Effective hospital management principles
- 1.4. Purpose of medical and non-medical data and records
- 1.5. Ethics and responsibility of management
- 1.6. Concept of management and its application in health care including hospital
 - 1.7.1 Management: Concept, principles, functions, scope and role, level and skills of manager
 - 1.7.2 Planning: Concept, principles, nature, types, instruments and steps
 - 1.7.3 Leadership: Concept, function, leadership styles, leadership and management
 - 1.7.4 Coordination: Concept, types, techniques of effective coordination
 - 1.7.5 Communication and counselling: Concept, communication processes and barrier to effective communication, techniques for improving communication
 - 1.7.6 Decision making: Importance, types, rational process of decision making, problem solving techniques, improving decision making
 - 1.7.7 Participative management: Concept, advantage and disadvantage, techniques of participation
 - 1.7.8 Time management: Concept, essential factors and strategies for effective time management
 - 1.7.9 Conflict management: Concept, approaches to conflict, levels of conflict, causes of conflict and strategies for conflict management
 - 1.7.10 Stress management: Concept, causes and sources of stress, techniques of stress management
 - 1.7.11 Change management: Concept, sources of organizational change, resistance to change, management of resistance to change
 - 1.7.12 Appreciative inquiry: Concept, basic principle and management
 - 1.7.13 Human resource management: Concept, functions and different aspects
 - 1.7.14 Health manpower recruitment and development
 - 1.7.15 Financial management: Concept, approaches, budget formulation and implementation, Auditing and topics related to fiscal administration

Part II: General Health Issues
(6 × 5) + (2 × 10) = 50 Marks

2. General Health Issues

- 2.1. Present constitution of federal republic of Nepal (including health and welfare issues)
- 2.2. Organizational structure of Ministry of Health at national/federal, regional/state, district (if applicable), municipal and village council level
- 2.3. Professional council and related regulations
- 2.4. National Health Policy
- 2.5. Health Service Act and Regulation
- 2.6. Second Long term health plan
- 2.7. Health Management Information System, forms, indicators, annual reports
- 2.8. Human Development Indices, Sustainable Development Goals
- 2.9. Health volunteers in the national health system, its rationale, use and effectiveness

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- 2.10. Local governance and community participation in health service delivery
- 2.11. Health Insurance and financing in health care
- 2.12. Alternative health care system: Ayurveda, homeopathy, Unani, Chinese etc.
- 2.13. Indigenous and traditional faith health and health practices
- 2.14. International Health Agencies: Roles and responsibilities of WHO, UNICEF, UNFPA, Inter-agency relationships, Government-agency coordination: Joint Annual Review meeting
- 2.15. Supervision, types and its usage in health sector
- 2.16. Monitoring and evaluation system in health sector
- 2.17. National Health Training Centre
- 2.18. National and International Disaster Plan, Coordination
- 2.19. General introduction of Civil Service Hospital and its Bylaws

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Paper II : Technical Subject
Section (A) – 50 Marks

1. **Physics in radiology**
 - 1.1 Production of x-rays
 - 1.2 Interaction of x-rays with metals
 - 1.3 X-ray tube
 - 1.4 Radiation protection
 - 1.5 Basic physics and advances in fluoroscopy/ imaging intensifier
 - 1.6 Basic physics and advances in CR/DR system
 - 1.7 Basic physics and advances in CT
 - 1.8 Basic physics and advances in MRI
 - 1.9 Basic physics and advances in USG
 - 1.10 Introduction to nuclear medicine
2. **Sectional and Imaging anatomy**
 - 2.1 Cross-sectional & imaging anatomy of brain
 - 2.2 Cross-sectional and imaging anatomy of chest
 - 2.3 Cross-sectional and imaging anatomy of Abdomen
 - 2.4 Anatomy of orbits and its bones
 - 2.5 Vascular anatomy of brain/head
 - 2.6 Vascular anatomy of abdominal aorta and its branches
 - 2.7 Vascular anatomy of upper and lower limbs
 - 2.8 Relevant Embryology
3. **Nervous system**
 - 3.1 Craniocerebral Trauma
 - 3.2 Imaging of non-traumatic SAH
 - 3.3 Imaging of non-traumatic ICH
 - 3.4 Imaging of stroke
 - 3.5 Cerebral ischemia
 - 3.6 Brain tumors and tumor like processes
 - 3.7 Extra-axial Tumors
 - 3.8 Imaging of sellar tumours
 - 3.9 Non-neoplastic and neoplastic spinal cord pathologies
4. **Head & Neck**
 - 4.1 Radiological imaging of diseases and conditions related to Ear, Nose, Throat
 - 4.2 Radiological imaging of diseases of thyroid, salivary gland and other soft tissue neck
5. **Paediatric imaging**
 - 5.1 Imaging of the kidneys and urinary tract in children
 - 5.2 Imaging of congenital CNS malformations
 - 5.3 Respiratory Distress
6. **Recent advances in radiology and imaging**
 - 6.1 Teleradiology, Radiology Information System & PACS
 - 6.2 Newer advances in CR/ DR system, Fluoroscopy and Mammogram
 - 6.3 Newer advances in CT and MRI

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Section (B) – 50 Marks

7. **CVS & Interventional**
 - 7.1 Radiological imaging of aortic and peripheral arterial diseases
 - 7.2 Radiologic approach to pulmonary thromboembolism
 - 7.3 Heart and pericardium
 - 7.4 Congenital and acquired heart disease
 - 7.5 Image guided radiological procedures and contrast media
8. **Musculoskeletal System**
 - 8.1 Skeletal trauma
 - 8.2 Radiological imaging of bone tumors
 - 8.3 Radiological imaging of large and small joints
 - 8.4 Haemopoietic bone disorder
 - 8.5 Osteomyelitis and septic arthritis
9. **Thoracic / respiratory system**
 - 9.1 Radiological imaging of Chest
 - 9.2 Chest trauma
10. **Gastrointestinal & hepatobiliary system**
 - 10.1 Imaging of non-neoplastic / neoplastic esophageal pathology
 - 10.2 Imaging of gastric pathology
 - 10.3 Liver neoplasms
 - 10.4 Inflammatory bowel disease
 - 10.5 Imaging and interventions in GI bleed
 - 10.6 Imaging of pancreatic neoplasm
11. **Genito-urinary system**
 - 11.1 Renovascular disease
 - 11.2 Genitourinary trauma
 - 11.3 Genito-urinary tumor
 - 11.4 Urinary bladder & Prostate imaging
12. **Breast and diagnostic ultrasound**
 - 12.1 Breast imaging
 - 12.2 Role of USG in IUGR
 - 12.3 Diagnostic ultrasound