

**निजामती कर्मचारी अस्पताल**  
**प्राविधिक सेवा, प्याथोलोजी समूह, जनरल प्याथोलोजी उपसमूह, सिनीयर रजिष्ट्रार (स्पेसलिष्ट) 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. **Histopathology**
  - 1.1 Gross anatomy and histology of specimens and tissues of gastrointestinal (GIT), cardiovascular (CVS), respiratory (RS) systems
  - 1.2 Normal physiology of above systems
  - 1.3 Gross anatomical alterations in the surgically removed specimens
  - 1.4 Gross pathological diagnosis of the lesions of gastrointestinal (GIT), cardiovascular (CVS), respiratory (RS) system
  - 1.5 Different types and functions of fixatives in histopathology laboratory
  - 1.6 Different types of chemicals and equipment used in tissue processing and procedure
  - 1.7 Steps and principles of H and E staining and mounting
  - 1.8 Interpretation the microscopic findings of various types of lesions of gastrointestinal (GIT), cardiovascular (CVS), and respiratory (RS) system
  - 1.9 Biochemical changes in a tissue or organ in above mentioned conditions.
  - 1.10 Diagnose the above mentioned lesions and differentiate them from other similar lesions in view of the clinical findings provided
  - 1.11 Gross anatomy and histology of specimens and tissues of renal electrolytes and reproductive systems
  - 1.12 Normal physiology of renal electrolytes and reproductive systems
  - 1.13 Metabolism of carbohydrate, fat, protein, nucleic acids, vitamins, copper and minerals
  - 1.14 Gross anatomical alterations in the surgically removed specimen of renal electrolytes respiratory systems and metabolic disorders
  - 1.15 Gross pathological diagnosis of the lesions of renal electrolytes and reproductive systems with clinical data
  - 1.16 Interpretation the microscopic findings of various lesions of renal electrolyte reproductive system and metabolic disorders
  - 1.17 Diagnose and differentiate with various other lesions of above mentioned system.
  - 1.18 Gross anatomy and histology of specimen and tissues from musculoskeletal system, neuro sensory systems, eye, ENT and skin
  - 1.19 Normal physiology of the above mentioned systems
  - 1.20 Gross anatomical alterations in the surgically removed specimen of above mentioned systems
  - 1.21 Correlate the gross findings with the microscopic features and clinical presentations
  - 1.22 Explain the use of museum and importance of preservation of specimens
  - 1.23 Frozen Section
    - 1.23.1 Principle and function of cryostat
    - 1.23.2 Frozen section of intraoperative specimens and diagnose
2. **Cytopathology**
  - 2.1 Normal cell morphology in vaginal, cervical and endometrial specimens and sputum specimen
  - 2.2 Preparation of the above mentioned smears, fix and stain with Pap staining and mount them
  - 2.3 Different types of fixatives used in cytopathological laboratory and their functions
  - 2.4 Fine needle aspiration biopsy procedure, wet and dry smears fix and stain the slides with Pap stain and Giemsa stain
  - 2.5 Principle of Pap stain and Giemsa stain
  - 2.6 Interpret the cellular morphological changes in sputum, vaginal, cervical and endometrial

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- specimen and neoplastic conditions
- 2.7 Correlate with the clinical findings and diagnose
  - 2.8 Different methods of preparing smears from body fluids including urine and CSF
  - 2.9 Principles of cytocentrifuge and Millipore filtration
  - 2.10 Normal cell morphology in brushing, washing and body fluids smears.
  - 2.11 Interpret the cellular morphological changes in brushing, washing and body fluid smears in different inflammatory, non-inflammatory, non-neoplastic and neoplastic conditions
  - 2.12 Correlate the findings with the clinical findings and diagnose them.
  - 2.13 Sex chromatin, methods of obtaining and preparation of smears for the examination of sex chromatin, Interpret the findings
  - 2.14 Congenital anomalies in relation to sex chromosome
  - 2.15 Interpret FNAC smears and diagnose the lesions
3. **Haematopathology**
- 3.1 Normal hemopoiesis and erythropoiesis.
  - 3.2 Structure, function, synthesis and metabolism of haemoglobin
  - 3.3 Classify the different types of Anaemias
  - 3.4 Aetiopathogenesis and morphological findings in the peripheral and bone marrow smears in different types of anaemia and diagnose correctly
  - 3.5 Routine as well as the following haematological tests and their principles:
    - 3.5.1 Reticulocyte count
    - 3.5.2 Osmotic fragility test
    - 3.5.3 Foetal haemoglobin
    - 3.5.4 LE cell phenomenon
    - 3.5.5 Hb electrophoresis
    - 3.5.6 Serum Iron, Folic acid, Vit B12
    - 3.5.7 Total Iron binding capacity
    - 3.5.8 Serum ferritin
  - 3.6 Perform a fine needle bone marrow aspiration and stain with Wright's stain
  - 3.7 Interpret and diagnose the morphological changes in the blood and bone marrow specimen
  - 3.8 Common haematological procedures and interpret the results
  - 3.9 Cytochemical test and interpretation
  - 3.10 Classify Leukaemia
  - 3.11 Different types and their morphological features
  - 3.12 Explain principles and interpretation of :
    - 3.12.1 Bleeding time
    - 3.12.2 Clotting time
    - 3.12.3 Prothrombin time
    - 3.12.4 Activated partial thromboplastin time
    - 3.12.5 Platelet function test
    - 3.12.6 Factor VII and IX Assay
    - 3.12.7 Bence Jones protein
  - 3.13 Plan a strategy of investigations for common haematological diseases

**Section (B): – 50 Marks**

4. **Clinical Microbiology**
- 4.1 Routine examination of urine and faeces and interpret the findings correctly
  - 4.2 Complete examination of CSF

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- 4.3 Examination of peripheral blood for blood parasites
  - 4.4 Semen analysis
  - 4.5 Common aerobic and anaerobic bacteria in a culture plate
  - 4.6 Gram's stain and identification of the common bacteria
  - 4.7 Sensitivity reactions of common bacteria
  - 4.8 Principle of Gram's stain and ZN stain
  - 4.9 Importance of collection of specimens of culture
  - 4.10 Principle of HbSAg, HIV tests
5. **Clinical Chemistry**
- 5.1 Perform and interpret correctly the routine clinical chemistry tests
  - 5.2 Working principles of spectrophotometer, colorimeter, flame photometer, blood gas analyzer, electrophoresis and automation in laboratory medicine
6. **Autopsy pathology**
- 6.1 Perform a complete/partial autopsy
  - 6.2 Gross and microscopic features found in autopsy body and tissue sections respectively and correlate it with clinical history and diagnosis
  - 6.3 Provisional and final anatomical diagnosis reports writing correctly
7. **Blood Bank**
- 7.1 Blood grouping and Rh typing tests and cross matching
  - 7.2 Coombs test
  - 7.3 Principles and interpretations of above tests
8. **Immunology**
- 8.1 Principles and interpretation of simple immunological tests:
    - 8.1.1 Agar Gel precipitation
    - 8.1.2 Haemagglutination
    - 8.1.3 Immunoelectrophoresis
    - 8.1.4 Identification of T and B cells in peripheral blood
    - 8.1.5 Immuno Fluorescence technique
    - 8.1.6 Counter current electrophoresis for demonstration of antigen
    - 8.1.7 ELISA techniques.
    - 8.1.8 Fluorescent microscopy
9. **Medical statistics and information technology**
- 9.1 Importance of statistical methods in assessing data from patient material and experimental studies, correlation coefficient, expected versus observed and their interpretations