

प्रदेश निजामती सेवा तथा स्थानीय सरकारी सेवा अन्तर्गत प्राविधिक तर्फ स्वास्थ्य सेवा,सबै समूह,सबै उपसमूह नवौं (९)

तहको खुला, अन्तर तह र आन्तरिक अन्तर सेवा प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

परीक्षा योजना

यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छ :

प्रथम चरण :- लिखित परीक्षा (Written Examination)

पूर्णाङ्क :- २००

द्वितीय चरण :- अन्तर्वार्ता (Interview)

पूर्णाङ्क :- ३०

प्रथम चरण (First Phase) : लिखित परीक्षा योजना (Written Examination Scheme)

Paper	Subject		Marks	Full Marks	Pass Marks	No. Questions & Weightage	Time Allowed
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			4 × 5 = 20 (Short answer) 3 × 10 = 30 (Long answer)	
II	Technical Subject			100	40	4 × 15 = 60 (Critical Analysis) 2 × 20 = 40 (Problem Solving)	3.00 hrs

द्वितीय चरण (Second Phase)

Paper	Subject		Full Marks			Time Allowed
	Interview		30		Oral	

द्रष्टव्य :

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।
- नेपाल स्वास्थ्य सेवा अन्तर्गतका सबै समूह/सबै उपसमूहहरूको लागि प्रथम पत्रको पाठ्यक्रमको विषयवस्तु एउटै हुनेछ । तर द्वितीय पत्र Technical Subject को पाठ्यक्रम समूह/उपसमूह अनुरूप फरक फरक हुनेछ ।
- प्रथमपत्र को लिखित परीक्षा समूह/उपसमूहका लागि संयुक्त रुपमा एउटै प्रश्नपत्रबाट एकैदिन वा छुट्टाछुट्टै प्रश्नपत्रबाट छुट्टाछुट्टै दिन पनि हुन सक्नेछ । यसैगरी द्वितीय पत्रको परीक्षा पनि समूह/उपसमूह अनुसार अलग अलग दिन छुट्टाछुट्टै प्रश्नपत्रबाट हुनेछ ।
- प्रथम पत्रको Part I र Part II को लागि छुट्टाछुट्टै (Part I को लागि एउटा र Part II को लागि एउटा) उत्तरपुस्तिका हुनेछ, भने द्वितीय पत्रको लागि प्रत्येक प्रश्नका उत्तरपुस्तिकाहरू छुट्टाछुट्टै हुनेछन् ।
- यस पाठ्यक्रममा जे सुकै लेखिएको भएतापनि पाठ्यक्रममा परेका ऐन, नियमहरू, परीक्षाको मिति भन्दा ३ महिना अगाडी (संशोधन भएका वा संशोधित भई हटाईएका वा थप गरी संशोधित भई कायम रहेका) लाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
- उल्लेखित पद, सेवा, समूह र तहका पाठ्यक्रम अद्यावधिक भई प्रकाशन नहुदासम्म लागू हुनेछ ।

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Paper I: General Subject
(Management and General Health Issues)

Part I: Management

1. Management: - concept, principles, functions, scope, role, level and skills of managers
2. Hospital management
3. Health manpower recruitment and development
4. Participative management: concept, advantages and disadvantages, techniques of participation
5. Time management: concept, advantages, and disadvantages
6. Conflict management: concept, approaches to conflict, levels of conflict, causes of conflict and strategies for conflict management
7. Stress management: concept, causes and sources of stress, techniques of stress management
8. Appreciative inquiry: concept, basic principles and management
9. Financial management: concept, approaches, budget formulation and implementation, auditing and topics related to fiscal management
10. Human resource management: concept, functions and different aspects
11. Planning: concept, principles, nature, types, instrument and steps
12. Leadership: concept, functions, leadership styles, leadership and management effectiveness
13. Coordination: concept, need, types, techniques, and approaches of effective coordination
14. Communication: concept, communication process and barrier to effective communication, techniques for improving communication

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Part II: General Health Issues

1. Present Constitution of Nepal (health and welfare issues)
2. National Health Policy, 2076
3. Second long term health plan (1997-2017)
4. Health services act 2053, health service regulation, 2055
5. Organizational structure of Ministry of Health at National, Regional and District and Below
6. International health agencies: role and responsibilities of WHO, UNICEF, UNFPA and interagency relationships
7. Professional council and related regulations
8. Medical ethics in general and its application
9. Indigenous and traditional faith healing and health practices
10. Supervision, types and its usage in health sector
11. Monitoring and evaluation system in health
12. Health management information system
13. Health insurance and financing in health care
14. Effects of environment in public health: air pollution, domestic pollution, noise pollution
15. Importance of water, sanitation and hygiene in public health
16. Effects of disaster in public health: deforestation, land slide, flood, earthquake and fire
17. Health volunteers involvement in health service delivery
18. Community involvement in health service delivery
19. Counseling: - concept, type, importance and its application in health service delivery

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Paper II: Technical Subject

1. Histopathology
 - 1.1. Identify and describe the gross anatomic and microscopic alteration in the surgically removed specimens and autopsy specimens. Interpret and diagnose when clinical and operative data are provided.
 - 1.2. Explain the principles of laboratory techniques and perform the procedures in histopathology laboratory
2. Cytopathology
 - 2.1. Interpret and diagnose the morphological changes in cytological specimens when clinical and operative data are provided.
 - 2.2. Explain the principles of laboratory techniques and perform the common procedures in cytopathology laboratory.
 - 2.3. Perform fine needles aspiration techniques.
3. Hematopathology
 - 3.1. Plan a strategy for investigating haematological disorders and perform and interpret them.
 - 3.2. Perform haematological procedures and interpret the results.
 - 3.3. Interpret and diagnose the morphological changes in the blood and bone marrow specimens.
 - 3.4. Perform a bone marrow aspiration.
4. Clinical Microbiology
 - 4.1. Routine and special tests of urine, stool and body fluids
 - 4.2. Staining technique, Gram's stain, AFB stain.
 - 4.3. Aerobic and anaerobic culture and sensitivity
 - 4.4. Common serological tests.
5. Clinical Chemistry
 - 5.1. Interpretation and procedure of routine clinical chemistry tests.
 - 5.2. Equipments: Spectrophotometer, Colorimeter, Flame photometer, Blood gas analyzer, Auto analyzer.
6. Autopsy pathology
 - 6.1. Dissection of body partial/whole
 - 6.2. Preparation of provisional anatomical diagnosis and final anatomical diagnosis
7. Blood Bank
 - 7.1. Blood preservation
 - 7.2. Haematophoresis
 - 7.3. Blood grouping and cross matching
8. Immunology
 - 8.1. Basic immunology
 - 8.2. Immunological techniques used for diagnostic purpose and their principles.
9. Medical statistics and information technology

1. Histopathology

- 1.1.1. Describe the gross anatomy and histology of specimens and tissues of gastrointestinal (GIT), cardiovascular (CVS), respiratory (RS) systems.
- 1.1.2. Describe the normal physiology of above systems.
- 1.1.3. Describe the normal physiology of above systems.
- 1.1.4. Identify and describe the gross anatomical alterations in the surgically removed specimens.

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- 1.1.5. Correlate the gross pathological diagnosis of the lesions of gastrointestinal (GIT), cardiovascular (CVS), respiratory (RS) system with the given clinical information.
- 1.1.6. Explain different types and functions of fixatives in histopathology laboratory.
- 1.1.7. Explain different types of chemicals, and equipment used in tissue processing and perform the procedure.
- 1.1.8. Explain the steps and principles of H and E staining and mounting and perform them.
- 1.1.9. Interpret the microscopic findings of various types of lesions of gastrointestinal (GIT), cardiovascular (CVS), and respiratory (RS) system.
- 1.1.10. Recall the biochemical changes in a tissue or organ in above mentioned conditions.
- 1.1.11. Diagnose the above mentioned lesions and differentiate them from other similar lesions in view of the clinical findings provided.
- 1.1.12. Describe the gross anatomy and histology of specimens and tissues of renal electrolytes and reproductive systems.
- 1.1.13. Describe the normal physiology of renal electrolytes and reproductive systems.
- 1.1.14. Describe metabolism of carbohydrate, fat protein, nucleic acids, vitamins, copper and minerals.
- 1.1.15. Identify and describe the gross anatomical alterations in the surgically removed specimen of renal electrolytes respiratory systems and metabolic disorders.
- 1.1.16. Correlate the gross pathological diagnosis of the lesions of renal electrolytes and reproductive systems with clinical data.
- 1.1.17. Interpret the microscopic findings of various lesions of renal electrolyte reproductive system and metabolic disorders.
- 1.1.18. Diagnose and differentiate with various other lesions of above mentioned system.
- 1.1.19. Describe the gross anatomy and histology of specimen and tissues from musculoskeletal system, neuro sensory systems, eye, ENT and skin.
- 1.1.20. Describe the normal physiology of the above mentioned systems.
- 1.1.21. Describe the gross anatomical alterations in the surgically removed specimen of above mentioned systems.
- 1.1.22. Correlate the gross findings with the microscopic features and clinical presentations.
- 1.1.23. Explain the use of museum and importance of preservation of specimens.
- 1.2. Frozen Section
 - 1.2.1. Describe the principle and function of cryostat.
 - 1.2.2.
 - 1.2.3. Perform frozen section of intraoperative specimens and diagnose.

2. Cytopathology

- 2.1. Describe the normal cell morphology in vaginal, cervical and endometrial specimens and sputum specimen.
- 2.2. Prepare the above mentioned smears, fix and stain with Pap staining and mount them.
- 2.3. Describe different types of fixatives used in cytopathological laboratory and explain their functions.
- 2.4. Perform fine needle aspiration biopsy procedure, prepare wet and dry smears fix and stain the slides with Pap stain and Giemsa stain.
- 2.5. Explain the principle of Pap stain and Giemsa stain.
- 2.6. Interpret the cellular morphological changes in sputum, vaginal, cervical and endometrial specimen and neoplastic conditions.
- 2.7. Correlate with the clinical findings and diagnose.
- 2.8. Describe the different methods of preparing smears from body fluids including urine and CSF.
- 2.9. Describe the principles of cytocentrifuge and Millipore filtration.
- 2.10. Describe the normal cell morphology in brushing, washing and body fluids smears.

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- 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. Explain sex chromatin. Describe the methods of obtaining and preparation of smears for the examination of sex chromatin.
- 2.14. Interpret the findings.
- 2.15. Describe the congenital anomalies in relation to sex chromosome.
- 2.16. Interpret FNAC smears and diagnose the lesions.

3. Haematopathology

- 3.1. Explain the normal hemopoiesis.
- 3.2. Describe the erythropoiesis.
- 3.3. Describe the structure, function, synthesis and metabolism of haemoglobin.
- 3.4. Classify the different types of Anaemias.
- 3.5. Explain the aetiopathogenesis and morphological findings in the peripheral and bone marrow smears in different types of anaemia and correlate with clinical data and diagnose correctly.
- 3.6. Perform routine as well as the following haematological tests and explain their principle:
 - 3.6.1. Reticulocyte count
 - 3.6.2. Osmotic fragility test
 - 3.6.3. Foetal haemoglobin
 - 3.6.4. LE cell phenomenon
 - 3.6.5. Hb electrophoresis
 - 3.6.6. Serum Iron, Folic acid, Vit B₁₂
 - 3.6.7. Total Iron binding capacity
 - 3.6.8. Serum ferritin
- 3.7. Perform a fine needle bone marrow aspiration and stain with Wright's stain.
- 3.8. Interpret and diagnose the morphological changes in the blood and bone marrow specimen.
- 3.9. Perform the common haematological procedures and interpret the results.
- 3.10. Perform cytochemical test and interpret.
- 3.11. Classify Leukaemia
- 3.12. Identify different types and their morphological features
- 3.13. Explain principles and interpretation of
 - 3.13.1. Bleeding time
 - 3.13.2. Clotting time
 - 3.13.3. Prothrombin time
 - 3.13.4. Activated partial thromboplastin time
 - 3.13.5. Platelet function test
 - 3.13.6. Factor VII and IX Assay
 - 3.13.7. Bence Jones protein
- 3.14. Plan a strategy of investigations for common haematological diseases.

4. Clinical Microbiology

- 4.1. Perform the routine examination of urine and faeces and interpret the findings correctly.
- 4.2. Perform complete examination of CSF
- 4.3. Perform examination of peripheral blood for blood parasites.
- 4.4. Semen analysis
- 4.5. Identify the common aerobic and anaerobic bacteria in a culture plate.
- 4.6. Perform the Gram's stain and identify the common bacteria.
- 4.7. Perform sensitivity reactions of common bacteria.
- 4.8. Explain the principle of Gram's stain and ZN stain.

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4.9. Explain the importance of collection of specimens of culture.

4.10. Explain principle of HbSAg, HIV tests.

5. Clinical Chemistry

5.1. Perform and interpret correctly the routine clinical chemistry tests.

5.2. Explain the 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. Identify the gross and microscopic features found in autopsy body and tissue sections respectively and correlate it with clinical history and diagnosis.

6.3. Write the provisional and final anatomical diagnosis reports correctly.

7. Blood Bank

7.1. Perform blood grouping and Rh typing tests and cross matching.

7.2. Perform Coombs test

7.3. Explain the principles and interpretations of above tests

8. Immunology

8.1. Observe and interpret simple immunological tests eg:

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. Explain the principle lying behind these tests.

8.1.9. Explain the principle of fluorescent microscopy.

9. Medical statistics and information technology

9.1. Explain the importance of statistical methods in assessing data from patient material and experimental studies, correlation coefficient, expected versus observed and their interpretations.

9.2. Calculate mean, standard deviation and standard error from given experimental data.

9.3. Familiarity with the use of the computer and other telecommunication devices like the fax for the storage, retrieval and sending of information.

9.4. Search for information in the Internet by electronic mail.