

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

प्राविधिक प्रहरी निरीक्षक (मेडिकल ल्याब टेक्नोलोजिष्ट) 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)

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या x अङ्कभार	समय
प्रथम	मेडिकल ल्याब टेक्नोलोजी	१००	४०	वस्तुगत बहुउत्तर (Multiple Choice)	१००x१=१००	१ घण्टा १५ मिनेट
द्वितीय		१००	४०	विषयगत (Subjective)	१०x१०=१००	३ घण्टा
तृतीय	नेपाल प्रहरी सेवा सम्बन्धी	५०	२०	वस्तुगत बहुउत्तर	१०x१ = १०	१ घण्टा
				बिषयगत	लामो उत्तर १x१० = १० छोटो उत्तर ६x५ = ३०	१० मिनेट

द्वितीय चरण

परीक्षाको किसिम	पूर्णाङ्क	परीक्षा प्रणाली
ब्यक्तिगत अन्तवार्ता	३५	मौखिक

द्रष्टव्यः

१. लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।
२. पाठ्यक्रमको प्रथम तथा द्वितीय पत्रको विषयवस्तु एउटै हुनेछ ।
३. प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
४. प्रथम तथा द्वितीय पत्रहरूका सेक्सनहरूबाट सोधिने प्रश्नसंख्या निम्नानुसार हुनेछः-

Section	A	B	C	D
प्रथम	२०	३०	३०	२०
द्वितीय	२	३	३	२

५. वस्तुगत बहुउत्तर (Multiple Choice) प्रश्नहरूको उत्तर सही दिएमा प्रत्येक सही उत्तर बापत पुरा अङ्क प्रदान गरिनेछ भने 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 ।
६. द्वितीय पत्रको विषयगत प्रश्नका लागि तोकिएका १० अङ्कका प्रश्नहरूको हकमा १० अङ्कको एउटा लामो प्रश्न वा 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 ।
७. यस पाठ्यक्रममा जेसुकै लेखिएको भएता पनि पाठ्यक्रममा परेका ऐन, नियमहरू परीक्षाको मिति भन्दा ३ (तीन) महिना अगाडि (संशोधन भएका वा संशोधन भई हटाइएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा रहेको सम्झनु पर्दछ ।
८. प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको अन्तर्वार्तामा सम्मिलित गराइनेछ ।
९. अन्तर्वार्ताको अंकभार सम्बन्धमा प्रहरी सेवाको पदमा नियुक्ति र बढुवा गर्दा अपनाउनु पर्ने सामान्य सिद्धान्त २०६९ को अनुसूची-१९ मा ब्यबस्था भए बमोजिम हुनेछ ।

प्राबिधीक प्रहरी निरीक्षक (मेडिकल ल्याब टेक्नोलोजिष्ट) समुहको खुल्ला प्रतियोगितात्मक लिखित परीक्षाको
पाठ्यक्रम ।

प्रथम तथा द्वितीय पत्र :- मेडिकल ल्याब टेक्नोलोजी

Section A- 20 Marks

1. Hematology 20%

- 1.1. Cleaning of glasswares and safety precaution in the laboratory
- 1.2. Collection and preservation of different samples for the laboratory
- 1.3. Preparation of chemicals and different stains for the hematological tests
- 1.4. Quality control in the laboratory
- 1.5. Formation and development of Erythrocytes, Leucocytes, thrombocytes
- 1.6. Principle and clinical procedure for 1.6.1 Hemoglobin estimation and it's standard curve calibration
- 1.6.2 Total count of W.B.C., R.B.C., Platelets and reticulocytes
- 1.6.3 E.S.R., B.T., C.T., and RBC indices
- 1.6.4 Foetal haemoglobin estimation
- 1.6.5 Coomb's tests
- 1.6.6 Blood banking & Transfusion
- 1.6.7 Coagulation profile (mechanism, disorder & investigations)
- 1.6.8 LE cell preparation
- 1.6.9 Tissue parasite
- 1.6.10 Absolutes cell count
- 1.7 Characteristics of Anemia, Leukaemia, Polycythemia, Leukamoid reaction, Thalassaemia & Haemoglobinopathies
- 1.8 Principles and procedure of Osmotic fragility tests and cyto chemical stains
- 1.9 Principle and procedure of G6PD, Hemoglobin electrophoresis
- 1.10 Preparation of reagents for special haematological investigation
- 1.11 Waster Disposal and Total Quality Management

Section B- 30 Marks

2. Microbiology 30%

2.1 Bacteriology. 10%

- 2.1.1 classification of medically important bacteria
- 2.1.2 Characteristics of Microorganism: Prokaryotes, Eukaryotes, Viruses
- 2.1.3 Bacterial growth and nutritional requirements, uptake of nutrients, growth phases and sporulation
- 2.1.4 Antimicrobial drugs and their mode of actions with reference to cell wall, cell membrane, Nucleic acid and protein synthesis
- 2.1.5 Different methods of sterilization and disinfections
- 2.1.6 Preparation of different media and ingredients uses and interpretation
- 2.1.7 Preparation of chemicals and stains
- 2.1.8 Cultural procedure of different samples aerobically and anaerobically
- 2.1.9 Identification of bacteria and confirmative tests serologically and biochemically
- 2.1.10 Different staining methods of bacteria and their principles
- 2.1.11 T.B Bacteriology and skin scraping for A.F.B
- 2.1.12 Water bacteriology
- 2.1.13 C.S.F. and cavity fluids for culture

2.2 Virology (Subsection 2.2& 2.3=10%)

- 2.2.1 Classification of medically important viruses and mode of infection

- 2.2.2 Characteristic of viruses, nature of viruses, viral structure and replication
- 2.2.3 Definition of R.N.A. and D.N.A. viruses
- 2.2.4 Principle and methods of serological procedure for HCV, HIV, HBsAg and HEV etc
- 2.3 Parasitology
 - 2.3.1 Classification of medically important 2.3.1.1 Protozoal parasites
 - 2.3.1.2 Helminthic parasites
 - 2.3.1.3 Blood parasites
 - 2.3.1.4 Semen analysis
- 2.3.2 Methods of identification of different parasites from stool samples by 2.3.2.1 Wet preparation
 - 2.3.2.2 Concentration methods
 - 2.3.2.3 Cultural methods
- 2.3.3 Method of identification of blood parasites
- 2.3.4 Routine Examination and special test in Urine

2.4 Mycology (Subsection 2.4& 2.5=10%)

- 2.4.1 Identification of superficial, deep & systemic mycosis
- 2.4.2 Opportunistic mycosis
- 2.4.3 Examination and identification by different method and culture
- 2.5 Immunology 2.5.1 Principle and procedure for the estimation of: 2.5.1.1 V.D.R.L.,(RPR)
- 2.5.1.2 T.P.H.A.,
- 2.5.1.3 A.S.O.
- 2.5.1.4 C.R.P.
- 2.5.1.5 Rheumatoid factor
- 2.5.1.6 Pregnancy test
- 2.5.1.7 TORCH Range
- 2.5.1.8 Cancer Marker
- 2.5.1.9 Agglutination Reaction
- 2.5.1.10 Precipitation Reaction
- 2.5.1.11 Flocculation Reaction
- 2.5.1.12 ELISA
- 2.5.1.13 Haemagglutination Reaction
- 2.6 Waster Disposal and Total Quality Management

Section C- 30 Marks

3. Biochemistry 30%

- 3.1 Preparation of normal and molar solution
- 3.2 Preparation of different reagents required for biochemical test
- 3.3 Colorimeter and spectro phometer
- 3.4 Flame Photometry
- 3.5 Carbohydrate metabolism: 3.5.1 Glycolysis
- 3.5.2 Glycogenesis
- 3.5.3 Glycogenolysis
- 3.5.4 Pentose phosphate pathway
- 3.5.5 Kreb's cycle
- 3.5.6 Gluconeogenesis
- 3.6 Protein metabolism 3.6.1 Transamination
- 3.6.2 Deamination
- 3.6.3 Urea cycle
- 3.6.4 Nitrogen balance
- 3.6.5 Creatinine and creatinine formation

- 3.7 Lipid metabolism 3.7.1 β -oxidation
- 3.7.2 α -oxidation
- 3.7.3 ω -oxidation
- 3.7.4 Ketone bodies formation and their utilization
- 3.7.5 Ketosis
- 3.7.6 Cholesterol and triglycerides synthesis
- 3.8 Hormone 3.8.1 Introduction
- 3.8.2 Types
- 3.8.3 Origin
- 3.8.4 Definition
- 3.8.5 Classification
- 3.8.6 Regulation
- 3.8.7 Measurement by various methods including RIA, EIA
- 3.9 Principle and procedure of different methods for the estimation of biochemical tests 3.9.1 Sugar, Urea, Creatinine, Uric Acid, Bilirubin, GPT, GOT, ALP, Lipid profile, Cardiac profile, Renal function test, Liver Function Test, Clearance study, Amylase & Electrolytes
- 3.9.2 Cavity fluids examination
- 3.9.3 C.S.F. examination
- 3.9.4 24 hours Urine Protein
- 3.10 Waste Disposal and Total Quality Management

Section D- 20 Marks

4. Histology/cytology 20%

- 4.1 Preparation of different types of fixatives and their uses
- 4.2 Methods of decalcification
- 4.3 Methods of processing of tissues to prepare paraffin block tissue
- 4.4 Description of different types of microtome, their principles and methods of cutting section from the paraffin block tissue
- 4.5 Preparation of routine and special histological and cytological stains and staining procedure
- 4.6 Principles and methods of staining and mounting the tissue section on the glass slides
- 4.7 Waste Disposal and Total Quality Management

-समाप्त-