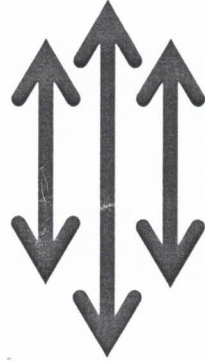


नेपाली सेना

श्री भर्ना छनौट निर्देशनालय, कार्यरथी विभाग,

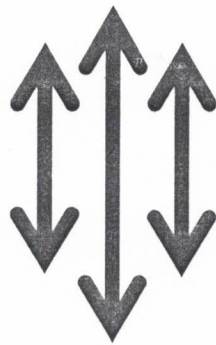
जंगी अड्डा



प्रा.उ.से. Bachelor in Medical Laboratory

Technology (खुला तथा आन्तरिक) पदको लिखित

परीक्षाको पाठ्यक्रम



२०७८

नेपाली सेना

प्रा.उ.से. Bachelor in Medical Laboratory Technology (खुला तथा आन्तरिक)

पदको लिखित परीक्षाको पाठ्यक्रम

समय: ४ घण्टा १५ मिनेट

पूर्णाङ्क : १५०

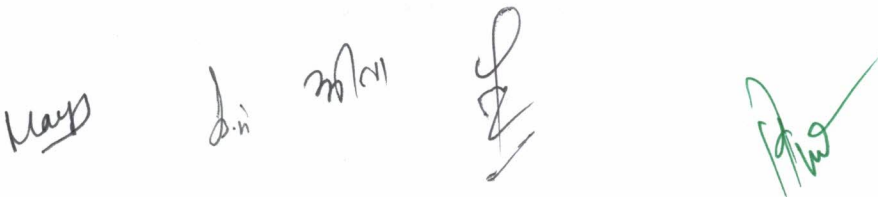
उत्तीर्णाङ्क : ६०

यो पाठ्यक्रम नेपाली सेनाको प्रा.उ.से. Bachelor in Medical Laboratory Technology (खुला तथा आन्तरिक) पदका उम्मेदवार छनौट परीक्षाको लागि निर्धारण गरिएको हो । लिखित परीक्षामा सरिक हुने उम्मेदवारहरूको पेशा सम्बन्धी विषयलाई आधारमानी प्रश्नहरू सोधिने छ ।

- (क) लिखित परीक्षाको माध्यम नेपाली/अंग्रेजी वा दुवै भाषा हुनेछ ।
- (ख) लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र अर्को चरणको परीक्षामा सम्मिलित गराईनेछ ।
- (ग) प्रश्नपत्र निर्माण गर्दा पाठ्यक्रममा समावेश भएका सबै विषयहरूलाई यथासंभव समेटिनेछ ।
- (घ) वस्तुगत र विषयगत संयुक्त रूपमा पूर्णाङ्क र उत्तीर्णाङ्क कायम गरिनेछ ।
- (ङ) वस्तुगत र विषयगत परीक्षाको पाठ्यक्रम एउटै हुनेछ ।
- (च) वस्तुगत र विषयगत विषयको लिखित परीक्षा एकैपटक वा छुट्टाछुट्टै गरी लिन सकिनेछ ।
- (छ) यो पाठ्यक्रम मिति २०७८/११/२२ गतेबाट लागु हुनेछ ।

लिखित परीक्षाको योजना र पाठ्यक्रम

विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली		प्रश्न संख्या अङ्क	समय
पेशा सम्बन्धी	७५	६०	वस्तुगत (Objective)	बहु वैकल्पिक प्रश्न (MCQs)	७५ प्रश्न x १ अङ्क=७५	१ घण्टा १५ मिनेट
	७५		विषयगत (Subjective)	छोटो उत्तर	९ प्रश्न x ५ अङ्क = ४५	३ घण्टा
				लामो उत्तर	३ प्रश्न x १० अङ्क = ३०	



नेपाली सेना

प्रा.उ.से. Bachelor in Medical Laboratory Technology (खुला तथा आन्तरिक) पदको

लिखित परीक्षाको पाठ्यक्रम

Section A- 45 Marks

1. Hematology

30%

- 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 Waste Disposal and Total Quality Management

Section B- 45 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
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

Handwritten signatures and initials at the bottom of the page, including a green signature on the right.

- 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

Maya bin nahi J. J. J.

- 2.5.1.7 TORCH Range
- 2.5.1.8 Tumour 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 Waste Disposal and Total Quality Management

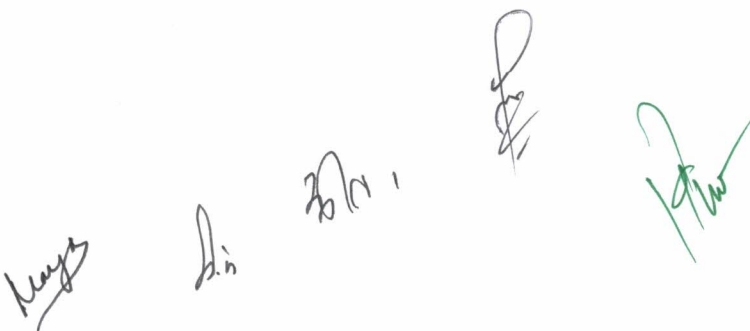
3 Biochemistry

20%

- 3.1 Preparation of normal and molar solution
- 3.2 Preparation of different reagents required for biochemical test
- 3.3 Colorimeter and spectrophotometer
- 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

Maya *S.N* *20/11* *[Signature]* *[Signature]*

- 3.7 Lipid metabolism
 - 3.7.1 -oxidation
 - 3.7.2 α -oxidation
 - 3.7.3 -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, Billirubin, GPT, GOT, ALP, Lipid profile, Cardic profile, Renal function test, Liver Function Test, Clearence 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- 30 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

यस विषयको पाठ्यक्रमका एकाईहरूबाट सोधिने प्रश्नहरूको संख्या निम्नानुसार हुनेछ ।

एकाई नं. (Unit no.)	अङ्कभार (Weightage)	बहुवैकल्पिक प्रश्न (MCQs) को संख्या	छोटो उत्तर प्रश्नको संख्या	लामो उत्तर प्रश्नको संख्या
१.	४५	४५	९ प्रश्न X ५ अङ्क = ४५	३ प्रश्न X १० अङ्क = ३०
२.	४५			
३.	३०	३०		
४.	३०			
	१५०	७५	४५	३०

प्रयोगात्मक परीक्षाको पाठ्यक्रम

समय: ६० मिनेट

पूर्णाङ्क: ५०

उत्तीर्णाङ्क: २५

SN	Topic	Full marks	Time(Minutes)
1	Idea of sample collection	10	10
2	Performance and principle of test	10	10
3	Knowledge of interpretation/Analysis	10	15
4	Quality control	10	15
5	Viva	10	10

समाप्त
