

प्रदेश लोक सेवा आयोग, कर्णाली प्रदेश

प्रदेश निजामती सेवा र स्थानीय सरकारी सेवाको स्वास्थ्य सेवा, मेडिकल ल्याब टेक्नोलोजी समूह, पाँचौ तह ल्याब टेक्निसियन पद वा सो सरहको खुला र आन्तरिक प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम र परीक्षा योजना

पाठ्यक्रमको रूपरेखा:— यस पाठ्यक्रमको आधारमा निम्नानुसार चरणमा परीक्षा लिइने छः

लिखित परीक्षा पूर्णाङ्क:— १००

अन्तर्वार्ता पूर्णाङ्क:— २०

प्रथम चरण:- लिखित परीक्षा योजना (Examination Scheme)

विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या X अङ्क भार	समय
सेवा सम्बन्धी	१००	४०	वस्तुगत: बहुवैकल्पिक (Multiple Choice)	७० प्रश्न X १ अङ्क = ७०	१ घण्टा ३० मिनेट
			विषयगत: छोटो उत्तर (Short Answers)	६ प्रश्न X ५ अङ्क = ३०	

अन्तिम चरण

विषय	पूर्णाङ्क	परीक्षा प्रणाली
अन्तर्वार्ता	२०	बोर्ड अन्तर्वार्ता

द्रष्टव्य:

- यस पाठ्यक्रमलाई प्रथम चरण र अन्तिम चरणमा विभाजन गरिएको छ।
- खुला र समावेशी समूहको परीक्षा एउटै प्रश्नपत्रबाट सञ्चालन हुनेछ।
- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी वा नेपाली र अंग्रेजी दुवै हुनसक्नेछ।
- वस्तुगत र विषयगत प्रश्नहरूको लागि छुट्टाछुट्टै उत्तरपुस्तिका परीक्षा सुरु हुनु अगावै दिइनेछ।
वस्तुगत र विषयगत प्रश्नहरूको उत्तर छुट्टाछुट्टै उत्तरपुस्तिकामा लेख्नुपर्नेछ।
- पाठ्यक्रमका एकाईबाट निम्नानुसार प्रश्नहरू सोधिनेछन्।

एकाई	१	२	३	४	५
वस्तुगत	२०	२०	२०	५	५
विषयगत	२	२	१	१	

६. वस्तुगत बहुवैकल्पिक प्रश्नहरूको गलत उत्तर दिएमा प्रत्येक गलत उत्तर वापत २० प्रतिशत अङ्क कट्टा गरिनेछ। तर उत्तर नदिएमा त्यस वापत अङ्क दिईने छैन र अङ्क कट्टा पनि गरिने छैन।
७. परीक्षा हलमा मोबाईल, क्याल्कुलेटर वा यस्तै प्रकारका विद्युतीय उपकरण, पुस्तक, नोटबुक, झोला लगायतका वस्तुहरू लैजान पाइने छैन।
८. यस पाठ्यक्रमका विषयवस्तुमा जुनसुकै कुरा लेखिएको भए तापनि पाठ्यक्रममा परेका कानुन, ऐन, नियमहरू तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भएका) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ।
९. प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र अन्तिम चरणको अन्तर्वार्तामा सम्मिलित गराइनेछ।
१०. प्रथम चरण र अन्तिम चरणको प्राप्ताङ्कको आधारमा अन्तिम परीक्षाफल प्रकाशित गरिनेछ।
११. पाठ्यक्रम अध्यावधिक मिति:- २०८०।०६।२१

विषय: सेवा सम्बन्धी

1. Haematology

- 1.1. Cleaning of glassware's and safety precaution in the laboratory
- 1.2. Collection and preservation of different samples for the laboratory test
- 1.3. Stain: Wright's, Giemsa's and Leishman's Stain - Principle, Preparation, Technique and Uses
- 1.4. Quality control in the Haematology laboratory
- 1.5. Formation and development of Erythrocytes, Leucocytes, thrombocytes
- 1.6. Principle and clinical procedure for:
 - 1.6.1. Hemoglobin estimation and its 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: MCH, MCV, MCHC
 - 1.6.4. Coomb's tests and cross match
 - 1.6.5. Blood Banking, Transfusion and its components
 - 1.6.6. Blood grouping and RH type
 - 1.6.7. Coagulation profile (mechanism, disorder & investigations)
 - 1.6.8. LE Cell phenomenon, preparation, and test procedure
 - 1.6.9. Tissue parasites
 - 1.6.10. Absolute eosinophil count
- 1.7. Anemia: classification and laboratory diagnosis
- 1.8. Sick cell anemia: Introduction and laboratory diagnosis
- 1.9. Hemoglobinopathy and Thalassemia: Introduction, classification and laboratory diagnosis
- 1.10. Leukemia: Introduction, classification and laboratory diagnosis
- 1.11. Coagulation profile: Introduction, mechanism, disorder and investigations; BT, CT, PT, APTT and coagulating factors
- 1.12. General knowledge about automation

2. MICROBIOLOGY

- 2.1. Bacteriology
 - 2.1.1. Classification of medically important microorganism
 - 2.1.2. Characteristics of Microorganism (Prokaryotes, Eukaryotes) and Viruses
 - 2.1.3. Different methods of sterilization, disinfections and antiseptics
 - 2.1.4. Bacterial growth and its requirement (growth factor)

- 2.1.5. Preparation of different medias and ingredients uses and interpretation of cultural growth
- 2.1.6. Stain: Introduction, types of stain, staining methods of bacteria and their principles
- 2.1.7. Culture media, Different methods of culture procedure for different samples
- 2.1.8. Culture: Inoculation, incubation, isolation and identification of bacteria from various samples
- 2.1.9. Identification of bacteria and confirmative tests- serologically and bio-chemically
- 2.1.10. Hanging drop preparation for identification of bacteria
- 2.1.11. Lab diagnosis of Mycobacteria (M. tuberculosis and M. leprae)
- 2.1.12. Quality assurance and control in Microbiology Laboratory
- 2.1.13. The universal precaution in microbiology laboratory and safe waste disposal of infected materials
- 2.1.14. Instruments: use, parts, handling and care of Microscope, Incubators, Hot air oven, Water bath, Refrigerator, Analytical balance, Colorimeter
- 2.2. Virology
 - 2.2.1. Terminology used in virology
 - 2.2.2. Basic laboratory procedures used in the diagnosis of viral diseases
 - 2.2.3. Structure, classification, general properties and replication of virus
- 2.3. Parasitology
 - 2.3.1. Introduction and classification of medically important intestinal, blood, urine and tissue parasites
 - 2.3.2. Terms used in parasitology
 - 2.3.3. Life cycle, Mode of transmission, laboratory diagnosis, prevention and control measures of:
 - 2.3.3.1. protozoal parasites: *Giardia lamblia*, *Entamoeba histolytica*, *Entamoeba coli*, *Trichomonas vaginalis*
 - 2.3.3.2. Helminthic parasites: *Ascaris lumbricoides*, *Ancylostoma duodenale*, *Necator americanus*, *Trichiuris trichiura*, *Strongyloides stercoralis*, *Enterobius vermicularis*, *Taenia solium*, *Taenia saginata*, *Hymenolepis nana*

- 2.3.3.3. Blood parasites: Plasmodium species (Malaria parasites),
Leishmania donovani (kalaazar) and Wuchereria bancrofti
(microfilaria)
- 2.3.4. Differences between Entamoeba histolytica and Entamoeba coli;
amoebic and bacillary dysentery
- 2.3.5. Reagents preparation: Normal saline, Iodine, Brine solution and
Saturated solution of zinc sulphate and sodium chloride
- 2.3.6. Stool sample collection, preservation and transportation
- 2.3.7. Stool examination: Routine and concentration technique,
interpretation of results
- 2.3.8. Occult blood test
- 2.3.9. Safety precaution and disposal of waste materials
- 2.4. Mycology
 - 2.4.1. Terminologies used in mycology
 - 2.4.2. Sample collection for fungal infection (skin, nail and hair scrapping)
 - 2.4.3. Fungal culture media
 - 2.4.4. Preparation of different types of chemicals and stains; Method of wet
preparation- KOH, Indian ink, and identification of fungus
- 2.5. Immunology
 - 2.5.1. Basic concept on immunology and serology
 - 2.5.2. Antigen and antibodies
 - 2.5.3. Type of reaction: flocculation, precipitation and agglutination
 - 2.5.4. Principle and procedure of:
 - 2.5.4.1. V.D.R.L (RPR)
 - 2.5.4.2. A.S.O.
 - 2.5.4.3. C.R.P.
 - 2.5.4.4. Rheumatoid factor
 - 2.5.4.5. ELISA Test
 - 2.5.4.6. Blood Grouping
 - 2.5.4.7. Widal

3. Biochemistry

- 3.1. Molecular and equivalent weight
- 3.2. Preparation of normal, molar and part solution
- 3.3. Colorimeter and spectrophotometer: parts and principle

- 3.4.Principle and procedure of different methods for the estimation of biochemical tests
 - 3.4.1. Sugar, Urea, Creatinine, Uric Acid, LFT, Amylase, Sodium and potassium
 - 3.4.2. Body fluids examination
 - 3.4.3. 24 hours Urine Protein
- 3.5.Simple theory of light waves, function of filters, Beers and Lamberts law, absorbance and percent transmission
- 3.6.The lab hazards and precautions to be taken while working in clinical biochemistry lab
- 3.7.Basic knowledge of glassware (test tube, flask, measuring cylinder) and cleaning of glassware's
- 3.8.CSF: Glucose, Protein, Cell count, Gram's stain, AFB stain
- 3.9.Urine analysis
 - 3.9.1. Importance of urine analysis, collection, preservation and transportation of urine sample for routine, microscopic and microbial tests
 - 3.9.2. Urine physical and pH test
 - 3.9.3. Albumin test: urine albumin test by heat and acetic acid. sulphosalicylic acid and strip method;
 - 3.9.4. Glucose: Preparation of Benedict's reagents, urinary glucose test by Benedict's and strip methods.
 - 3.9.5. Ketone body test by various methods
 - 3.9.6. Microscopic examination of urinary deposit
 - 3.9.7. Urine pregnancy and ketone test
- 3.10. Semen analysis: Volume, PH, Sperm morphology, Motility, Count and their normal ranges
- 3.11. General knowledge of automation

4. Anatomy and Physiology

- 4.1.Important anatomical terminologies
- 4.2.The composition and function of blood
- 4.3.Structure and functions of different body systems
 - 4.3.1. Respiratory System
 - 4.3.2. Cardio-vascular System
 - 4.3.3. Gastro-intestinal System

4.3.4. Urinary System

4.3.5. Reproductive System

4.3.6. Endocrine System

4.3.7. Blood, Lymphatic and Immune System

5. Histology and Cytology

5.1. Different types of fixatives, stain and their uses

5.2. Methods of decalcification

5.3. Methods of processing of tissues to prepare paraffin block tissue

5.4. Methods of cutting section from the paraffin block tissue and staining procedure