

प्रदेश लोक सेवा आयोग

बागमती प्रदेश

स्वास्थ्य सेवा, मेडिकल ल्याब टेक्नोलोजी समूह, चौथो तह, ल्याब असिष्टेण्ट पदको प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

पाठ्यक्रमको रूपरेखा:- यस पाठ्यक्रमको आधारमा निम्नानुसार चरणमा परीक्षा लिइने छ:-

प्रथम चरण:- लिखित परीक्षा

पूर्णाङ्क:- १००

द्वितीय चरण:- अन्तर्वार्ता

पूर्णाङ्क:- २०

लिखित परीक्षा योजना (Examination Scheme)

प्रथम चरण:-

विषय	पूर्णाङ्क	उत्तीर्णङ्क	परीक्षा प्रणाली	प्रश्न सङ्ख्या X अङ्कभार	समय
सेवा सम्बन्धी	१००	४०	वस्तुगत बहुवैकल्पिक (Multiple Choice)	५०प्रश्न X २ अङ्क = १००	४५ मिनेट

द्वितीय चरण:-

विषय	पूर्णाङ्क	परीक्षा प्रणाली
अन्तर्वार्ता	२०	मौखिक

द्रष्टव्यः

- 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।
- कुनै पनि प्रकारको क्याल्कुलेटर (Calculator) र विद्युतीय उपकरणहरू (Electronic devices) परीक्षा हलमा लैजान र परीक्षामा प्रयोग गर्न पाइने छैन।
- पाठ्यक्रममा रहेका पाठ्यांशहरूबाट देहाय अनुसार प्रश्नहरू सोधिने छुः

Course Unit	Number of Questions
A	12
B	10
C	12
D	12
E	2
F	2

४. प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको अन्तर्वार्तामा सम्मिलित गराइनेछ।

५. पाठ्यक्रम लागू मिति:- २०७७।८।५

पत्र/विषय: सेवा सम्बन्धी

A. Microbiology

1. Bacteriology

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- 1.1 General knowledge about Bacteriology
- 1.2 Morphology of Bacteria (size, shape)
- 1.3 Differentiation of bacteria (cocci, bacilli)
- 1.4 Sample collection (pus, urine, throat swab, sputum, blood)
- 1.5 Principle of Gram's stain, microscopic identification of Gram +ve and Gram –ve bacteria.
- 1.6 Staining- Use of different dye and its principle, method of preparation.
- 1.7 Mycobacteria- M. tuberculosis/M.leprae, sample collection , staining and recording result.
- 1.8 Preparation of sputum smear
- 1.9 Safety precaution and proper disposal of infected materials.
- 1.10 Culture media-General introduction to different type of culture media.
- 1.11 General introduction to sterilization- by dry heat, moist heat,
- 1.12 Cultural technique of blood, urine, sputum, throat swab.
- 1.13 Use of disinfectants-preparation of disinfectant solution.

2. Parasitology

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- 2.1 Introduction to parasitology,
- 2.2 Terms used in parasitology
- 2.3 Classification of parasites
- 2.4 Helminthic parasites(Ascaris lumbricoides, Ancylostoma duodenale, Necator Americans, Trichiuris trichiura, Strongyloides stercoralis, Enterobius vermicularis, Taenia solium, Taenia saginata, Hymenolepis nana, life cycle, mode of transmission, laboratory diagnosis, prevention and control measures.
- 2.5 Protozoal parasites(Giardia lamblia, Entamoeba histolytica, Entamoeba coli, Balantidium coli, Trichomonas vaginalis, Trichomonas hominis) - life cycle, mode of transmission, laboratory diagnosis, prevention and control measures.
- 2.6 Dysentery (amoebic and bacillary dysentery).
- 2.7 Difference between of Entamoeba coli & Entamoeba histolytica
- 2.8 Laboratory procedure :
 - 2.8.1 Collection of sample.
 - 2.8.2 Preparation of reagents: normal saline solution, Iodine solution, 33% Zinc sulphate sol'n.
 - 2.8.3 Stool examination- routine and concentration method, interpretation of results.
 - 2.8.4 Occult blood test.
 - 2.8.5 Disposal of waste materials

3 Mycology

- 3.1 Introduction and different types of Fungus

4 Virology

- 4.1 Introduction and different types of Virus.

B. Haematology

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- 1 Composition of blood, plasma, serum and whole blood.
- 2 Collection of blood sample – finger prick, vein puncture, ear lobe prick.
- 3 Anticoagulants, types of anticoagulants, preparation of Anticoagulant vials.

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- 4 Use of instruments – Sahli's haemoglobinometer, haemocytometers, diluting pipettes, Neubauer counting chamber, ESR tubes, importance of bulk dilution, preparation of blood diluting fluid.
- 5 Preparation of thin and thick blood smears.
- 6 Total WBC, RBC and platelet count.
- 7 Sources of error in blood count.
- 8 Differential WBC count.
- 9 ESR estimation (Wintrobe and Westergren method).
- 10 Haemoglobin estimation, preparation of standard curve.
- 11 Preparation of Drabkin's Solution.
- 12 Use of Sahli Haemoglobinometer
- 13 Preparation of N/10 HCL.
- 14 Performance of –BT, CT,
- 15 Staining procedure – Preparation and use of Wright's stain and its principle.
- 16 Blood parasites – Malaria, filaria,
- 17 Perform blood grouping
- 18 Sources of errors in above haematological tests.
- 19 Quality control in haematology.

C. Biochemistry

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- 1 Basic chemistry- matter, substance, atom and molecules element, compound.
- 2 Solution- Preparation of normal sol'n,
- 3 Cleaning of glass-wares
- 4 Instrument : Colorimeter, , Centrifuge, Balance, Refrigerator
- 5 Law of colorimetry-Beer's and Lambert's law
- 6 Collection of specimen for biochemical tests
- 7 Estimation of blood glucose preparation of std. curve interpretation of results, source of errors.
- 8 Estimation of Blood Urea ,interpretation of result, source of errors.
- 9 Preparation of reagents for Glucose, Urea,
- 10 Estimation of Serum amylase, and calculation of results.
- 11 CSF – Glucose, Protein, Cell count, Gram's stain, AFB stain

D. Miscellaneous

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1. *Urinalysis*

- 1.1 Importance of urine analysis
- 1.2 Collection of specimen
- 1.3 Preservation of urine for routine & culture purpose.
- 1.4 Examination of urinary deposit
- 1.5 Urine albumin test by heat and acetic acid, SSA method & strip.
- 1.6 Urinary glucose test by Benedict's & strip methods.
- 1.7 Preparation of Benedict's reagents.
- 1.8 Principle and different methods (Latex , Immunochromatography) of urine Pregnancy test.

2. *Semen analysis*

- 2.1 Volume
- 2.2 Motility
- 2.3 Sperm count

3. *Instrumentation*

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- 3.1 Microscope- use of microscope, parts of microscope, handling of microscope, Cleaning of Microscope
- 3.2 Use of incubators, hot air oven, water bath, refrigerator, chemical balance, Colori meter.
- 3.3 Basic knowledge of glass-wares (test tube, flask, measuring cylinder).
4. *Immunology*
 - 4.1 Perform VDR L and HIV tests.
 - 4.2 Definition of precipitation, agglutination, flocculation.
5. *Quality control in following tests*
 - 5.1 Gram's stain, AFB microscopy
 - 5.2 TC, DC, Hb, ESR
 - 5.3 Blood sugar, Blood urea
6. *Basic knowledge of Anatomy and Physiology*
 - 6.1 Digestive system – pancreatic amylase, ptylin
 - 6.2 Urinary system – kidney, bladder, ureter
5. *Cooperative and health*
6. *Health provisions in current periodic plan of Bagmati Province*
7. *Tourism development in Nepal. Challenges and Opportunities*

E. अङ्ग्रेजी: Knowledge on writing correct English sentence, letter, and report according to English grammar based on the following syntactic functions:

- a. Parts of Speech:
 - i. Noun
 - ii. Pronoun
 - iii. Adjective
 - iv. Determiner
 - v. Verb
 - vi. Adverb
 - vii. Preposition
 - viii. Conjunction and
 - ix. Interjection
- b. Infinitive and gerund, reported speech and tense

F. नेपाली: नेपाली भाषामा स्तरीय लेखनको लागि आवश्यक पर्ने व्याकरण अनुरूप शुद्धा शुद्धि बनाउने। यसका लागि निम्न विषयमा ध्यान केन्द्रित गर्ने:

वर्णविन्यास, पदसङ्गति, नाम, सर्वनाम, क्रियापद, विशेषण, काल, वाच्य, पदवर्ग, अनुकरणात्मक शब्द, कारक र विभक्ती, वचन, पुरुष, लिङ्ग, उल्टो अर्थ आउने शब्द, पर्यायवाची शब्द, तत्सम शब्द, तद्भव शब्द, आगन्तुक शब्द, उपसर्ग लागेर निर्मित शब्दहरू, प्रत्यय लागेर निर्मित शब्दहरू, समास भएर निर्मित शब्दहरू, द्वित्व भएर निर्मित शब्दहरू, ह्रस्व दीर्घ, श, ष, स लगायतका व्याकरणगत शुद्ध लेखनशैलीमा केन्द्रित विषयहरू सहितको नेपाली शुद्धाशुद्धिको ज्ञान