

प्रदेश लोक सेवा आयोग, मधेश प्रदेश
स्वास्थ्य सेवा, मेडिकल ल्याव टेक्नोलोजी समूह, ज.मे.ल्या.टे. उप-समूह, सहायक चौथो तह, ल्याव असिस्टेण्ट पदको
खुला र अन्तर सेवा प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम ।

द्वितीय पत्र (Paper II):-
सेवा सम्बन्धित कार्य-ज्ञान (Job Based - knowledge)
खण्ड (Section) (A): ५० अङ्क

1. Microbiology (30 Marks)

1.1 Bacteriology

- 1.1.1 General knowledge about Bacteriology
- 1.1.2 Morphology of Bacteria (size, shape)
- 1.1.3 Differentiation of bacteria (cocci, bacilli)
- 1.1.4 Sample collection (pus, urine, throat swab, sputum, blood)
- 1.1.5 Principle of Gram's stain, microscopic identification of Gram +ve and Gram-ve bacteria
- 1.1.6 Staining - Use of different dye and its principle, method of preparation.
- 1.1.7 Principle of AFB stain, Procedure, identification of AFB positive & AFB negative bacteria.
- 1.1.8 Preparation of sputum smear
- 1.1.9 Safety precaution and proper disposal of infected materials
- 1.1.10 Culture media- General introduction to different types of culture media
- 1.1.11 General introduction to sterilization- by dry heat, moist heat
- 1.1.12 Cultural technique of blood, urine, sputum, throat swab
- 1.1.13 Use of disinfectants-preparation of disinfectant solution

1.2 Parasitology

- 1.2.1 Introduction to parasitology
- 1.2.2 Terms used in parasitology
- 1.2.3 Classification of parasites
- 1.2.4 Helminthic parasites (Ascaris lumbricoides, Ancylostoma duodenale, Necator Americanus, Trichiuris trichiura, Strongyloides stercoralis. Enterobius vermicularis. Taenia solium. Taenia saginata, Hymenolepis nana) - life cycle, mode of transmission, laboratory diagnosis, prevention and control measures
- 1.2.5 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
- 1.2.6 Dysentery (amoebic and bacillary dysentery)
- 1.2.7 Difference between of E. coli & Entamoeba histolytica
- 1.2.8 Laboratory procedure:
 - 1.2.8.1 Collection of sample
 - 1.2.8.2 Preparation of reagents: normal saline solution, Iodine solution, 33% Zinc sulphate solution
 - 1.2.8.3 Stool examination - routine and concentration method, interpretation of results
 - 1.2.8.4 Occult blood test
 - 1.2.8.5 Disposal of waste materials.

1.3 Mycology

- 1.3.1 Introduction to mycology & classification of fungi

1.4 Virology

- 1.4.1 Introduction & classification of viruses

2. Biochemistry (20 marks)

- 2.1 Basic chemistry- matter, substance, atom and molecules element, compound
- 2.2 Solution-Preparation of normal solution

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- 2.3 Cleaning of glass-ware
- 2.4 Instruments: Colorimeter, Centrifuge, Balance, Refrigerator
- 2.5 Law of colorimetry - Beer's and Lambert's law
- 2.6 Collection of specimen for biochemical tests
- 2.7 Estimation of B.glucose preparation of std. curve interpretation of results, source of errors
- 2.8 Estimation of Blood Urea, creatinine, Uric acid, S. Bilirubin(T/D) SGPT, Total cholesterol, Triglycerides, result interpretation, source of errors
- 2.9 Preparation of reagents for Glucose, Urea,
- 2.10 Estimation of S.amylase, and calculation of results
- 2.11 CSF-Glucose, Protein, Cell count, Gram's stain, AFB stain

खण्ड (Section) (B):- ५० अङ्क

3. Haematology (25 Marks)

- 3.1 Composition of blood, plasma, serum and whole blood
- 3.2 Collection of blood sample - finger prick, vein puncture, ear lobe prick
- 3.3 Anticoagulants, types of anticoagulants, preparation of Anticoagulantvials
- 3.4 Use of instruments - Sahli's haemoglobinometer, haemocytometers, diluting pipettes, Neubaur counting chamber, ESR tubes, importance of bulk dilution, preparation of blood diluting fluid
- 3.5 Preparation of thin and thick blood smears
- 3.6 Total WBC, RBC and platelet count
- 3.7 Sources of error in blood count
- 3.8 Differential WBC count
- 3.9 ESR estimation (Wintrobe and Westergren method)
- 3.10 Haemoglobin estimation, preparation of standard curve
- 3.11 Preparation of Drabkin's Solution
- 3.12 Use of Sahli Haemoglobinometer
- 3.13 Preparation of N/10 HCL
- 3.14 Performance of - BT, CT
- 3.15 Staining procedure - Preparation and use of Wright's stain and its principle
- 3.16 Blood parasites - Malaria, filaria
- 3.17 Perform blood grouping
- 3.18 Sources of errors in above haematological tests.
- 3.19 Quality control in haematology

4.Miscellaneous (25 Marks)

- 4.1 Urine / analysis
 - 4.1.1 Importance of urine analysis
 - 4.1.2 Collection of specimen
 - 4.1.3 Preservation of urine for routine & culture purpose
 - 4.1.4 Examination of urinary deposit
 - 4.1.5 Urine albumin test by heat and acetic acid, SSA method & strip
 - 4.1.6 Urinary glucose test by Benedict's & strip methods.
 - 4.1.7 Preparation of Benedict's reagents
- 4.2 Semen analysis
 - 4.2.1 Volume
 - 4.2.2 Motility

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- 4.2.3 Sperm count
- 4.3 Instrumentation
 - 4.3.1 Microscope - parts of microscope, use and handling of microscope
 - 4.3.2 Use of incubators, hot air oven, water bath, refrigerator, chemical balance, Colori meter
 - 4.3.3 Basic knowledge of glass-wares (test tube, flask, measuring cylinder)
- 4.4 Immunology
 - 4.4.1 Brief concept about Rapid Diagnostic Test Kits (VDRL, RPR, HIV tests) National testing Algorithm & result Interpretation.
 - 4.4.2 Definition of precipitation, agglutination, flocculation
- 4.5 Quality control in following tests.
 - 4.5.1 Gram's stain, AFB microscopy
 - 4.5.2 TC, DC, Hb, ESR
 - 4.5.3 Blood sugar, Blood urea
- 4.6 Basic knowledge of Anatomy and Physiology
 - 4.6.1 Digestive system pancreatic amylase, ptylin
 - 4.6.2 Urinary system kidney, bladder, ureter
 - 4.6.3 Circulatory system-blood

द्वितीय पत्रको लागि यथासम्भव निम्नानुसार प्रश्नहरु सोधिनेछ ।

द्वितीय पत्र (विषयगत)					
पत्र	विषय	खण्ड	अङ्क भार	छोटो उत्तर	लामो उत्तर
द्वितीय	सेवा सम्बन्धित कार्य-ज्ञान (Job Based-Knowledge)	(A)	५०	६ प्रश्न X ५ अङ्क = ३०	१० प्रश्न X २ अङ्क = २०
		(B)	५०	६ प्रश्न X ५ अङ्क = ३०	१० प्रश्न X २ अङ्क = २०