

Pokhara University Teaching Hospital
Curriculum for Lab Technician (Head Assistant) Level Examination

For Written Examination
Full Marks: 65

There shall be 3 hrs. written examination based on the following syllabus

Group A: Written Examination

65 Marks

1. Hematology About different hematological Profile test and its clinical application (10)

Cleaning of glassware's and safety precaution, Hemoglobin, W.B.C, R.B.C., Platelets and reticulocytes, E.S.R., B.T., C.T., and RBC indices, Anemia and its types, Blood grouping and RH type.

2. Microbiology, Bacteriology, Virology, Parasitology, Mycology, and Immunology (25)

Bacteriology

Classification of medically important bacteria. Characteristics of Microorganism: Prokaryotes, Eukaryotes, Viruses, Different methods of sterilization and disinfections, Stain: Introduction, types of stain staining methods of bacteria and their principles and T.B. Bacteriology and slit smear for A.F.B. Instruments; Microscope: use, parts, handling and care. Use and care of incubators, hot air oven, water bath, refrigerator, analytical balance.

Virology

Basic laboratory procedures used in the diagnosis of viral diseases and Structure, classification, general properties and replication of virus.

Parasitology

Introduction and classification of medically important intestinal, blood, urine and tissue parasites, Life cycle, Mode of transmission, laboratory diagnosis, prevention and control measures: Protozoalparasites, Giardialamblia, Entamoebahistoltytica, Entamoeba coli, Helminthic parasites: scarislumbrioides, Ancylostomaduodenale, , Taeniasolium, Taeniasaginata, Hymenolepis nana and Blood parasites.

Mycology

Sample collection for fungal infection (skin, nail and hair scrapping) Fungal culture media. Preparation of different types of chemicals and stains; Method of wet preparation- KOH, Indian ink, and identification of fungus.

Immunology

Antigen and antibodies: Type of reaction: flocculation, precipitation and agglutination V.D.R.L (RPR)., A.S.O, C.R.P., Rheumatoid factor, ELISA, Blood Grouping, and Widal

3. Biochemistry (20)

Molecular and equivalent weight, Preparation of normal, molar and part solution. Colorimeter, spectrophotometer and General knowledge of automation in biochemistry. The lab hazards and precautions to be taken while working in clinical biochemistry lab, Sugar, Urea, Creatinine, Uric Acid, LFT, Amylase, Sodium and potassium, 24 hours Urine Protein, Glucose: Preparation of Benedict's reagents, urinary glucose test by Benedict's and strip

methods, Semen analysis: volume, and pH, sperm morphology, motility and count, and normal values of semen.

4. Anatomy and Physiology- Different organ system and its Function (5)

5. Histology and Cytology Fixatives, Decalcification and Tissue cutting section (5)

Different types of fixatives, stain and their uses. Methods of decalcification, Methods of processing of tissues to prepare paraffin block tissue and methods of cutting section from the paraffin block tissue and staining procedure.

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For Practical Examination
Full Marks: 35

Practical examination based on the following syllabus

Group B: Practical Examination

35 Marks

Hematology

Preparation of chemicals and different stains for the Hematological tests: Hemoglobin, Total count of W.B.C, R.B.C., Platelets and reticulocytes, E.S.R., B.T., C.T, PT, Absolute cell count and Blood grouping and RH type.

Microbiology

Stain: Different staining methods of bacteria and their principles, Observation of motility in bacteria using: Hanging drop method, T.B. Bacteriology and slit smear for A.F.B and Identification of bacteria, Instruments: Microscope: use, parts, handling and care; Use and care of incubators, hot air oven, water bath, refrigerator, and analytical balance.

Virology

Perform serological tests based on immuno chromatography technique for HIV, HBV & HCV infections

Parasitology

Reagents preparation: Normal saline and Iodine solution.

Mycology

Prepare 10% KOH solution and SDA medium and Perform skin/nail/hair-scraping, KOH preparation and inoculation in SDA.

Immunology

V.D.R.L (RPR), A.S.O., C.R.P and Rheumatoid factor.

Biochemistry

Perform blood glucose, urea, creatinine, uric acid, albumin, and HDL cholesterol.
