

बि.पि. कोइराला मेमोरियल क्यान्सर अस्पताल
प्राविधिक (स्वास्थ्य) सेवा, मेडिकल (एलाइड हेल्थ) समुह, मेडिकल ल्याब टेक्नोलोजी उपसमुह, अधिकृत आठौं
तह, वरिष्ठ टेक्नोलोजिष्ट पदको खुला र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छ :

प्रथम चरण :- लिखित परीक्षा (Written Examination)

पूर्णाङ्क :- २००

द्वितीय चरण :- अन्तर्वार्ता (Interview)

पूर्णाङ्क :- ३०

परीक्षा योजना (Examination Scheme)

प्रथम चरण (First Phase) : लिखित परीक्षा

Paper	Subject	Full Marks	Pass Marks	No. Questions & Weightage	Time Allowed
I	Technical Subject & Organizational Knowledge	100	40	100× 1= 100 (Objective Multiple Choice Questions)	1.15 hrs
II		100	40	4 × 5 = 20 8 × 10 = 80 (Subjective Descriptive Type)	3.00 hrs

द्वितीय चरण (Second Phase)

Subject	Full Marks	Examination
Interview	30	Oral

द्रष्टव्य :

- यो पाठ्यक्रमको योजनालाई प्रथम चरण र द्वितीय चरण गरी दुई भागमा विभाजन गरिएको छ ।
- प्रथम र द्वितीय पत्रको पत्रको विषयवस्तु एउटै हुनेछ ।
- प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
- वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरूको गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अङ्क कटौत गरिनेछ । तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कटौत पनि गरिने छैन ।
- वस्तुगत बहुवैकल्पिक हुने परीक्षामा परीक्षार्थीले उत्तर लेख्दा अंग्रेजी ठूलो अक्षर (Capital letter) A,B,C,D मा लेख्नुपर्नेछ । सानो अक्षर (Small letter) a,b,c,d लेखेको वा अन्य कुनै सङ्केत गरेको भए सबै उत्तरपुस्तिका रद्द हुनेछ ।
- बहुवैकल्पिक प्रश्नहरू हुने परीक्षामा कुनै प्रकारको क्याल्कुलेटर (Calculator) प्रयोग गर्न पाइने छैन ।
- परीक्षामा सोधिने प्रश्नसंख्या, अङ्क र अङ्कभार यथासम्भव सम्बन्धित पत्र /विषयमा दिइए अनुसार हुनेछ ।
- परीक्षामा परीक्षार्थीले मोबाइल वा यस्तै प्रकारका विद्युतीय उपकरण परीक्षा हलमा लैजान पाइने छैन ।
- विषयगत प्रश्न हुने पत्रका हकमा प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन् । परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डको उत्तरपुस्तिकामा लेख्नुपर्ने छ ।
- यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, ऐन, नियम तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्भन्नु पर्दछ ।
- प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
- पाठ्यक्रम लागू मिति :- २०७८/०२/१५

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Paper I & II : - Technical Subject & Organizational Knowledge
Section (A): 45% Marks

1. **Haematology**
 - 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 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
 - 1.6.4 Coomb's tests
 - 1.6.5 Blood banking & Transfusion
 - 1.6.6 Coagulation profile (mechanism, disorder & investigations)
 - 1.6.7 LE cell preparation
 - 1.6.8 Tissue parasite
 - 1.6.9 Absolute cell count
 - 1.6.10 The composition and function of blood
 - 1.6.11 Classification of leukemia
 - 1.7 Identify different types of leukemia and their morphological features
2. **Microbiology**
 - 2.1 Bacteriology
 - 2.1.1 Classification of medically important bacteria
 - 2.1.2 Characteristics of Microorganism: Prokaryotes, Eukaryotes, Viruses
 - 2.1.3 Different methods of sterilization and disinfections
 - 2.1.4 Preparation of different media and ingredients uses and interpretation
 - 2.1.5 Preparation of chemicals and stains
 - 2.1.6 Cultural procedure of different samples aerobically
 - 2.1.7 Identification of bacteria and confirmative tests serologically and biochemically
 - 2.1.8 Different staining methods of bacteria and their principles
 - 2.1.9 T.B. Bacteriology and skin scraping for A.F.B
 - 2.1.10 Quality control in Bacteriology Laboratory
 - 2.1.11 The universal precaution in microbiology laboratory and safe waste disposal of infected materials
 - 2.2 Virology
 - 2.2.1 General properties of virus comparing with bacteria, terminology used in virology and basic laboratory procedure used in the diagnosis of viral disease
 - 2.2.2 Principle of viral isolation, embryonated egg and tissue culture
 - 2.2.3 Immunology of viral infection
 - 2.3 Parasitology
 - 2.3.1 Classification of human and vectors
 - 2.3.2 General characteristics of Protozoa, Helminthes, trematodes/ cestodes
 - 2.3.3 Methods of collection, transportation and storage of different types of specimens
 - 2.3.4 Methods of identification parasites from different types of clinical materials

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2.4 Mycology

2.4.1 Terminologies used in mycology sample collection for fungal infection (skin scarping, nails and hair) and method of wet preparation

2.4.2 Examination and identification by different method and culture

2.5 Immunology

2.5.1 Immune system and infectious diseases

2.5.2 Structure, types and function of Immunoglobulin

2.5.3 Toxin/ antitoxin and antibody/antigen reaction; and their various types

2.5.4 Principle and procedure for the estimation 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 Blood Grouping

2.5.4.6 Cancer Marker

2.5.4.7 Agglutination Reaction

2.5.4.8 Precipitation Reaction

2.5.4.9 Flocculation Reaction

2.5.4.10 ELISA

2.5.4.11 Haemagglutination Reaction

Section (B): 45% Marks

3. Biochemistry

3.1 Molecular weight and equivalent weight

3.2 Preparation of normal and molar solution

3.3 Colorimeter/spectrophotometer

3.4 Principle and procedure of different methods for the estimation of biochemical tests

3.4.1 Sugar, Urea, Cratinine, Uric Acid, Billirubin, GPT, GOT, ALP, Lipid profile, Cardic profile, Renal function test, Liver Function Test, Thyroid Function Test, Clearence study, Amylase & Electrolytes

3.4.2 Cavity fluids examination

3.4.3 C.S.F. examination

3.4.4 24 hours Urine Protein

3.5 Simple theory of lights waves, function of filters Beers and Lamberts law, absorbance and percent transmission

3.6 Tumor Marker

3.6.1 Estimation and interpretation of AFP, B-hCG, CEA, CA-125, CA 19-9, CA 15-3, PSA

3.7 Recent advances in clinical biochemistry

3.8 Management of Biochemistry Laboratory

4. Histology/Cytology

4.1 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 Methods of cutting section from the paraffin block tissue and staining Procedure

4.5 Principle and application of immunohistochemistry

4.6 Immunoflourscence technique

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- 4.7 Electron Microscopic and its applications
 - 4.8 Safety measures and quality assurance in Histopathology
 - 4.9 Uses of Cytogenetics, Flowcytometry, and Polarized microscopy in cytological study
 - 4.10 Frozen section and their uses, processing tissue for frozen section and its interpretation
5. **Laboratory management:**
- 5.1 Laboratory Accreditation and key component of accreditation
 - 5.2 Health and Safety measures (Physical/Chemical/Biological/Radiation)
 - 5.3 Laboratory waste disposal
6. **Laboratory mechanics:**
- 6.1 Cell Separator
 - 6.2 Blood Banking set-up

Section (C): 10 % Marks

7. **Concept of management**
- 7.1 Management: concept, scope, functions, principles, and its practices
 - 7.2 Hospital Management : concept, scope, function, principle and its practices
 - 7.3 Communication skills, problem solving and decision making
 - 7.4 Planning, organizing, monitoring and evaluation in health sector
 - 7.5 Participative management
 - 7.6 Social justice and social security system in Nepal
 - 7.7 Positive attitude and self-development
 - 7.8 Demographic characteristic of Nepal
8. **Organizational Knowledge and General Health Issues**
- 8.1 B.P.Koirala Memorial Cancer Hospital : History, organizational structure, functions, roles, services, problems and challenges
 - 8.2 National Health Policy
 - 8.3 B.P.Koirala Memorial Cancer Hospital related act and regulations
 - 8.4 Health Service Act, 2053 and Health Service Regulation, 2055
 - 8.5 Professional council related acts and regulations
 - 8.6 Professional and medical ethics