

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  
एवं परीक्षा योजना

कुल पूर्णाङ्क : १२०

१. प्रथम चरण : – लिखित परीक्षा				पूर्णाङ्क :- १००		
पत्र / विषय	पूर्णाङ्क	उतीर्णाङ्क	परीक्षा प्रणाली		प्रश्नसंख्या X अङ्क	समय
General Subject and Technical Subject	१००	४०	वस्तुगत	बहुवैकल्पिक प्रश्न (MCQs)	१०० प्रश्न x १ अङ्क	१ घण्टा ३० मिनेट

२. द्वितीय चरण : – अन्तर्वार्ता

विषय	पूर्णाङ्क	परीक्षा प्रणाली
अन्तर्वार्ता	२०	मौखिक

**द्रष्टव्य :**

१. यो परीक्षा योजनालाई प्रथम चरण (लिखित परीक्षा) र द्वितीय चरण (अन्तर्वार्ता) गरी दुई चरणमा विभाजन गरिएको छ ।
२. लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
३. लिखित परीक्षामा यथासम्भव पाठ्यक्रमका सबै एकाईबाट देहाय बमोजिम प्रश्नहरु सोधिनेछ ।

खण्ड	अङ्कभार	वस्तुगत प्रश्न संख्या
<b>A</b>	१०	१० प्रश्न X १ अङ्क = १०
<b>B</b>	१०	१० प्रश्न X १ अङ्क = १०

४. वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरुको 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 ।
५. यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, ऐन, नियम तथा नीतिहरु परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्भन्नु पर्दछ ।
६. प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरुलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
७. पाठ्यक्रम लागू मिति :- २०७४/११/२९

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पत्र/विषय : **General Subject and Technical Subject**

**General Subject**

**Section (A) – 10 Marks**

**1. B.P.Koirala Memorial Cancer Hospital, Related Legislations and General Health Issues**

- 1.1. B.P.Koirala Memorial Cancer Hospital : History, organizational structure, functions, roles, services, problems and challenges
- 1.2. National Health Policy
- 1.3. B.P.Koirala Memorial Cancer Hospital related act and regulations
- 1.4. Health Service Act, 2053 and Health Service Regulation, 2055
- 1.5. Professional council related acts and regulations
- 1.6. Professional ethics

**Technical Subject**

**Section (B) – 90 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 it's 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 Absolutes 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

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- 2.1.11 The universal precaution in microbiology laboratory and safe west 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
- 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
- 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

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- 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
  - 4.7 Electron Microscopic and its applications
  - 4.8 Safety measures and quality assurance in Histopatholaboratory
  - 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

The questions distribution for this paper/subject shall be as follows:

Section	Marks	Multiple Choice Questions
		No. of Questions × Mark
A	10	10 Questions × 1Mark =10 Marks
B	90	90 Questions × 1Mark =90 Marks