

**बि.पि. कोइराला मेमोरियल क्यान्सर अस्पताल**  
**प्राविधिक (स्वास्थ्य) सेवा, मेडिकल (एलाइड हेल्थ) समुह, फार्मसी उपसमुह, अधिकृत सातौं तह, फार्मसी**  
**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 कट्टा गरिनेछ । तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा 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 :- २०७८/०९/३१

**Paper I & II : - Technical Subject & Organizational Knowledge**

**Section (A): 40% Marks**

**1. Pharmaceutics**

- 1.1 Introduction, scope and area of Pharmaceutics
- 1.2 Pharmaceutical development and pharmaceutical institution in Nepal
- 1.3 Introduction to pharmacopoeias and other compendia; pharmacopoeial standards and their needs; importance and application of pharmacopoeial specification
- 1.4 Introduction to Good Manufacturing Practice, Good Laboratory Practice and Good Pharmacy Practice
- 1.5 Quality Assurance and WHO guidelines and ISO 9000
- 1.6 Prescription, proper handling of prescription, incompatibilities
- 1.7 Pharmaceutical dosage form: Fast, Immediate, Sustained/controlled release including novel drug delivery system. e.g. mucosal drug delivery systems
- 1.8 Pharmaceutical additives
- 1.9 Physical pharmacy; application of thermodynamics; rate and order of reaction; accelerated stability testing and shelf-life of drugs; pH; buffered and isotonic solution; solution of electrolytes; micromeritics; colloidal system; theology
- 1.10 Concept and studies of Bio-availability and Bioequivalence
- 1.11 Alternative systems of medicine: Ayurveda, Homoeopathy and Unani

**2. Microbiology**

- 2.1 Scope of microbiology with special reference to pharmaceutical sciences, basic principles of sterility and pyrogen testing, fundamental of Immunology, Testing of vaccines used in Extended Programme of Immunization
- 2.2 Microbial contamination test in pharmaceuticals, food, water and environment; classification of pathogenic microorganisms
- 2.3 Basic principles of Biotechnology
- 2.4 Methodology of sterilization

**3. Pharmaceutical analysis**

- 3.1 Fundamental titrimetric analysis: acid-base, oxidation-reduction, non-aqueous, complexometric and potentiometric titrations
- 3.2 Spectroscopic methods of analysis, Absorption, Visible, IR, UV spectroscopy, Fluorimetry, Polarimetry, Atomic absorption and Emission spectroscopy
- 3.3 Gravimetric analytical methods and their applications
- 3.4 Separation techniques: Column, Paper, Thin layer, Ion exchange, Gel and Gas chromatography; High Performance Liquid Chromatography, High Performance Thin Layer Chromatography, Electrophoreses
- 3.5 Extraction procedures and role of partition coefficient
- 3.6 Principles and application of microbiological assay of antibiotics and vitamins.
- 3.7 Good Laboratory Practices, validation, references standards
- 3.8 Statistical analysis, sampling technique and use of statistics

**Section (B): 40% Marks**

**4. Pharmacognosy**

- 4.1 Definition, history & scope of Pharmacognosy
- 4.2 Medicinal herbs of Nepal: Origin, distribution, cultivation, drying, pulverization, storage, and quality control

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- 4.3 Plant analysis, types of plant constituents and physico-chemical standards
- 4.4 Plant based drugs in modern medicine
- 4.5 Extraction process and isolation of active ingredients, pilot plant processing
5. **Pharmacology**
  - 5.1 Mechanism and action of drugs, their safety, uses and mode of administration
  - 5.2 Pharmacokinetics, pharmacodynamics and pharmacological evaluation of drugs
  - 5.3 Poisoning: control and treatment
  - 5.4 Adverse drug reaction and drug interactions
6. **Medicinal Chemistry**
  - 6.1 Characterization of organic compounds of pharmaceutical interest and specific reactions
  - 6.2 Synthesis of important pharmaceuticals, their pharmacological action and anti-microbial activities
7. **Pharmaceutical Care & Drug Supply Management**
  - 7.1 Comprehensive knowledge of clinical and hospital pharmacy; patient counseling and dosage adjustment in elderly, impaired liver and kidney; use of drug in neonates, children, pregnancy and lactation
  - 7.2 Logistics management (selection, procurement, storage and distribution)
  - 7.3 Drug Financing Schemes (cost recovery, sharing and insurance)
  - 7.4 Concept of Essential Drugs, National Formulary, Hospital Formulary and Drug & Therapeutics Committee
  - 7.5 Standard Treatment Schedules and rational use of drugs
  - 7.6 Role of Pharmacist in hospital and community
8. **Chemotherapeutic agents** - MOA, indications, side effects, drug interaction

**Section (C): 20 % Marks**

9. **Concept of management**
  - 9.1 Management: concept, scope, functions, principles, and its practices
  - 9.2 Hospital Management : concept, scope, function, principle and its practices
  - 9.3 Communication skills, problem solving and decision making
  - 9.4 Planning, organizing, monitoring and evaluation in health sector
  - 9.5 Participative management
  - 9.6 Social justice and social security system in Nepal
  - 9.7 Positive attitude and self-development
  - 9.8 Demographic characteristic of Nepal
10. **Organizational Knowledge and General Health Issues**
  - 10.1 B.P.Koirala Memorial Cancer Hospital : History, organizational structure, functions, roles, services, problems and challenges
  - 10.2 National Health Policy
  - 10.3 National Drug Policy
  - 10.4 B.P.Koirala Memorial Cancer Hospital related act and regulations
  - 10.5 Health Service Act, 2053 and Health Service Regulation, 2055
  - 10.6 Professional council related acts and regulations

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10.7 Professional and medical ethics

10.8 Role and Responsibility of Nepal Pharmacy Council

## 11. Related Legislations

11.1 औषधि ऐन, २०३५

11.2 औषधि दर्ता नियमावली, २०३८

11.3 औषधि परामर्श परिषद् र औषधि सल्लाहकार समिति गठन नियमावली, २०३७

11.4 औषधि जांचबूझ तथा निरीक्षण नियमावली, २०४०

11.5 औषधि स्तर नियमावली, २०४३

11.6 औषधि उत्पादन संहिता, २०४१

11.7 लागु औषध (नियन्त्रण) ऐन, २०३३