प्रदेश लोक सेवा आयोग

नेपाल स्वास्थ्य सेवा,फार्मेसी समूह, फार्मेसी अधिकृत पद, सातौं तहको खुला र आन्तरीक प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

पाठ्यक्रमको रूपरेखाः- यस पाठ्यक्रमको आधारमा निम्नानुसार दुई चरणमा परीक्षा लिइने छः-

प्रथम चरणः- लिखित परीक्षा पू र्णाङ्कः- २००

द्वितीय चरणः- सामूहिक परीक्षण र अन्तर्वार्ता पूर्णाङ्कः- ४०

प्रथम चरणः- लिखित परीक्षा योजना (Examination Scheme)

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्याXअङ्कभार	समय
प्रथम	Basic Knowledge on Management, Applicable Legislations and Contemporary Issues	१००	४०	विषयगत (Subjective)	६x५= ३०	२ घण्टा १५ मिनेट
	फार्मेसी			वस्तुगत बहुवैकल्पिक (MCQs)	७० X१=७०	
द्वितिय	फार्मेसी	१००	४०	विषयगत (Subjective)	१०X१०=१००	३ घण्टा

द्वितीय चरण

विषय	पूर्णाङ्क	परीक्षा प्रणाली	समय
सामूहिक परीक्षण (Group Test)	२०	सामूहिक छलफल(Group Discussion)	३० मिनेट
अन्तर्वार्ता	३०	मौखिक	-

१. लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।

२. पाठ्यक्रमको प्रथम तथा द्वितीय पत्रको विषयवस्तु एउटै हुनेछ ।

३. प्रथम र द्वितीय पत्रको परीक्षा छुट्टाछुट्टै हुनेछ ।

४. प्रथम र द्वितीय पत्रका एकाईहरुबाट सोधिने प्रश्नसंख्या निम्नानुसार हुनेछ ।

प्रथम पत्रका एकाइ	Part I	१	२	३	४	५							
प्रश्न सङ्ख्या		१	१	१	१	२							
प्रथम पत्रका एकाई	Part II	१	२	३	४	५	६	७	८	९	१०	११	१२
प्रश्न संख्या		५	७	५	७	७	५	७	५	६	८	४	४
द्वितीय पत्रका खण्ड	A		B		C			D					
द्वितीय पत्रका एकाई	१	२	३	४	५	६	७	८	९				
प्रश्न संख्या	१	१	१	१	१	१	१	१	२				

५. वस्तुगत बहुवैकल्पिक 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 ।
६. बहुवैकल्क प्रश्नहरु हुने परीक्षामा कुनै प्रकारको क्याल्कुलेटर प्रयोग गर्न पाइने छैन ।
७. विषयगत प्रश्नका लागि तोकिएका १० अङ्कका प्रश्नहरुको हकमा १० अङ्कको एउटा लामो प्रश्न वा एउटै प्रश्नका दुई वा दुई भन्दा बढी भाग वा एउटा प्रश्न अन्तर्गत दुई वा बढी टिप्पणीहरु सोध्न सकिने छ ।
८. द्वितीय पत्रमा प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरु हुनेछन् । परिक्षार्थीले प्रत्येक खण्डका प्रश्नहरुको उत्तर सोही खण्डको उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
९. 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 सम्झनु पर्दछ ।
१०. पाठ्यक्रम लागू मितिः-

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प्रथम र द्वितिय पत्र :- फार्मेसी

Part I - Basic Knowledge on Management, Applicable Legislations and Contemporary Issues

(5 × 6 Marks = 30Marks)

1. Basic Knowledge on Nepal and Bagamati State: (1 ×5 Mark = 5 Marks)

1.1 Physical, socio-cultural and economic geography and demography of Nepal
1.2 Geographical diversity, climatic conditions, and livelihood & lifestyle of people of Bagamati State
1.3 Current periodical plan of Bagamati State

2. Some Components of the Constitution of Nepal (1 ×5 Mark = 5 Marks)

2.1The Constitution of Nepal (Preamble, Parts1 to 5, Parts 15, 21, 23, 25 and Schedules 5,6,7,8 and 9)

3. Management Aspects and Governance (1×5 Mark = 5 Marks)

3.1 Management concepts:
- Planning, organizing, directing, controlling, coordinating, budgeting,
- Motivation & morale
- Leadership
- Decision making,
- Supervision, Monitoring and Evaluation

3.2 Project Cycle
3.3 Good Governance

4. Relevant Cross Cutting Issues: (1 ×5 Mark = 5 Marks)

4.1Sustainable Development Goals and Health
4.2 Climate change and environment,
4.3 Disaster Management
4.4 Effectiveness of Service Delivery through Citizen Charter, Social Audit, Public Hearing, Grievance Handling and Information Technology,
4.5 Effectiveness of Service Delivery- Public Service Charter
4.6Evaluation of public works by citizens: public hearings, social audit, public audit and third party evaluations
4.7 Reservation and Positive Discrimination

5. Applicable Legislations: (2 ×5 Mark = 10 Marks)

5.1The Public Procurement Act, 2063
5.2 The Public Procurement Rules, 2064 (2007)
5.3 The Prevention of Corruption Act, 2059 (2002 A.D)
5.4 Money Laundering Prevention Act, 2064 (2008)
5.5 Right to Information Act, 2064 (2007)
5.6 Provisions of State Civil Service Act and Regulation of Bagamati State
5.7 Nepal Health services Act, Nepal Health Service regulation
5.8 National Health policy, Nepal Medical Council Act
5.9 Mother's milk Substitute Act, Organ transplant Act
5.10 legalization of abortion

प्रदेश लोक सेवा आयोग

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Section A- 20 Marks

Part II: Pharmacy

1. Development of Pharmacy and Drug Legislation in Nepal.

1.1. Pharmaceutical development in Nepal.
1.2. Pharmaceutical institution in Nepal.
1.3. Drug legislation in Nepal.
1.4. National Health Policy, National Drug Policy and their relation.
1.5. Role and Responsibility of Nepal Pharmacy Council

2. **Pharmaceutical analysis**

2.1Fundamental of pharmaceutical analysis, classification

2.2 Titrimetric analysis: Principle, types and applications, Acid-base, Oxidation-reduction, Non-aqueous, Complexometric, potentiometric titrations (Karl-Fischer titration), conductometric titration; Ion selective electrodes.

2.3 Gravimetric analysis: Principle, types and applications.

2.4 Spectroscopic methods of analysis: Principle, types, instrumentation and applications
Absorption and emission Spectroscopy: UV/visible spectroscopy, IR spectroscopy, Fluorimetry, Polarimetry, Atomic absorption and Emission spectroscopy.

2.5 Separation techniques: Column, Paper, Thin layer, Ion exchange, Gel and Gas chromatography; High Performance Liquid Chromatography, High Performance Thin Layer Chromatography, Electrophoreses.

2.6Extraction procedures

2.7 Principles, application and method of microbiological assay of antibiotics and vitamins.

2.8Good Laboratory Practices, validation, references standards, calibration, standardization.

2.9 Statistical analysis, sampling technique, analysis of variance and interpretation.

Section B- 20 Marks

3. Pharmaceutics, Quality assurance, Instrumental analysis, Physical pharmacy, Biopharmaceutics

3.1. Pharmaceutics: Dosage forms (solid, semi-solid, liquid), pharmaceutical additives. Definition, types of dosage forms, formulation, ingredients, excipients, conditions and environment, manufacturing process and its types, machine, or equipment's use in manufacturing process, types of defects, evaluation of different types of dosage forms, storage.

Parenteral, ophthalmic and biological preparations

Theory, principle, equipment and operation: Size reduction, size separation, mixing and homogenization, filtration and clarification, extraction and galenical, heat process, distillation, drying process, sterilization, disinfection, aseptic technique.

Modified release dosage form: Fast, Immediate, Sustained/controlled release including novel drug delivery system.

Prescription, proper handling of prescription, incompatibilities.

Packaging of pharmaceuticals, cosmetology

3.2. Quality Assurance: concept and elements of Good Manufacturing Practice and Good laboratory Practice

Lay out plan of pharmaceutical manufacturing plant, material flow, personnel flow. Cross contamination and safety measures in factories.

Concept of total quality management, quality review, quality documentation (validation, qualification, calibration), ISO

3.3. Instrumental analysis: Introduction, working principle, diagram, operation, calculation, interpretation of result, , , precaution, trouble shooting, application, limitations of instruments use in pharmaceutical analysis. (UV/Visible spectrophotometry, Fluorimetry, Infrared spectrophotometry, Nuclear Magnetic Resonance spectroscopy, Mass spectrometry, Flame photometry, emission spectroscopy, atomic absorption spectroscopy, X-ray diffraction, Radioimmune assay

3.4. Physical pharmacy; Chemical kinetic, drug stability, dissolution, diffusion, interfacial phenomena, micromeritic, rheology, complexation- protein binding, colloids, suspension, emulsion

3.5. Biopharmaceutics: absorption of drugs, distribution, protein binding, biotransformation, prodrug, excretion of drugs, pharmacokinetic drug interaction, pharmacokinetic basic consideration (orders of reactions), compartment modeling, Nonlinear pharmacokinetic, bioavailability and bioequivalence, application of pharmacokinetic principles, drug concentration and pharmacologic response, controlled release medication, numerical

4.Microbiology and biotechnology

4.1 Scope of microbiology with special reference to pharmaceutical sciences.

4.2Basic principles of sterility and pyrogen testing

4.3 Drug resistance

4.5 Fundamental of Immunology, Testing of vaccines used in Extended Programme of Immunization.

4.6 Microbial contamination test in pharmaceuticals, food, water and environment

4.7 Classification of pathogenic microorganisms., environmental monitoring/ bio load/ aseptic technique, bioassay

4.8 Sterilization (principle, types, equipment, method, application, advantages, disadvantages)

4.9 Biotechnology: principle, procedure, application,

4.10 Biotechnological products.

4.11 Immunology and immunological preparations, genetic recombination, antibiotic, microbial transformation, enzyme immobilization

Section C- 30 Marks

5. Pharmacognosy

5.1 Herbs of Nepal: Origin, distribution, cultivation, drying, pulverization, storage, and quality control.

Classification of crude drugs, quality control and evaluation of crude drug, Method of cultivation, collection, drying and storage of crude drugs.

Pharmacogenetic study of crude drugs

3.2Plant analysis, types of plant constituents and physio-chemical standards.

3.3Plant based drugs in modern medicine.

3.4Extraction and isolation of active ingredients, pilot plant processing.

3.5 Complementary and alternative system of medicines and its different dosage forms (focusing Ayurvedic)

6.Pharmacology

5.1Basic pharmacology: pharmacokinetic and pharmacodynamics, Factors affecting pharmacokinetic and pharmacodynamics of drugs, types of adverse drug reactions, half-life, bioavailability, principle of drug actions

5.2Mechanism of action, indication, adverse drug reaction, drug interaction, contraindications and patient counseling of different categories of drugs.

5.3Toxicology

5.4Drug nomenclature, routes of drug administration, principle of drug actions.

5.5 List of emergency and lifesaving drugs.

7. Medicinal Chemistry and inorganic chemistry

7.1Characterization and classification of organic compounds of pharmaceutical interest Structures, nomenclature, physiochemical properties, mechanism of action, structure activity relationship, synthesis of organic compounds and its indication of organic medicinal compounds.

7.2 Rules of nomenclature, molecular formula and chemical structure of organic compounds

7.3 Principle of drug design.

7.4 Inorganic chemistry: Physio-chemical properties, method of quality control, storage, stability, medical and pharmaceutical use of inorganic substances.

Quality control of active inorganic molecules and its quality assurance: assay, identification test, limit test, sources of impurities, Pharmacopoeias, official monograph and its importance.

Section D- 30 Marks

8. Drug Act & Pharmacopoeia

8.1Legislation

Drug Act, regulations, codes and guidelines:

Drug Act 2035

- Drug advisory committee & consultative council regulation, 2037
- Drug registration regulation, 2038
- Inquiry & inspection regulation, 2040
- Drug standard regulation, 2043
- Drug sales & distribution codes, 2071
- Good Manufacturing practice codes , 2072
- Medicine registration guidance, 2073
- Hospital pharmacy guideline 2072

8.2 National health policies and National drug policies

8.3 Banned drugs in Nepal and reasons to band drugs

8.3 Pharmacopoeia; Pharmacopeial standards and their needs; importance and application of pharmacopeial specification.

प्रदेश लोक सेवा आयोग

नेपाल स्वास्थ्य सेवा,फार्मेसी समूह, फार्मेसी अधिकृत पद, सातौं तहको खुला र आन्तरीक प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

9. Hospital pharmacy, clinical pharmacy, community pharmacy& Drug Supply Management

9.1Hospital pharmacy: Definition, function, objectives, scope, layout, design, material and personnel flow, concept of essential drugs, National Formulary, hospital formulary and Drug & Therapeutics Committee, pharmacist (professional and regulatory requirements, qualification, responsibilities, skills, scope, challenges), rational use of drug, Good Pharmacy Practice, documentation and record retrieval system

Logistics management (selection, procurement, storage and distribution). Drug store management and inventory control, drug supply system in hospital, drug financing schemes (cost recovery, sharing and insurance), hospital manufacturing and pre-packing in hospital, dispensing of controlled drugs, record keeping and stock maintenance

Hospital committee:

Drug and therapeutic committee: Goal, objective, scope, structure, role in drug management cycle, role and responsibilities of a pharmacist in the committee, rational use of drug, adverse drug reaction (pharmacovigilance), challenges

Infection control committee, antibiotic monitoring committee, Research and Ethics committee

9.2 Clinical pharmacy: Definition, function, objectives, scope, list of elements of pharmaceutical care, pharmacist (professional and regulatory requirements, qualification, responsibilities, skills, scope, challenges), Standard Treatment Schedules and rational use of drugs.

Patient data analysis and prescribing guidelines, medicine history, interpretation of lab report, study of adverse drug reaction (pharmacovigilance), drug interaction, drug dependence, drug abuse, clinical trial and pharmacist role in clinical trial, therapeutic drug monitoring role of pharmacist, technique of monitoring drug therapy, drug information, drug use in special population.

9.3 Community pharmacy: Scope, professionalism, regulatory requirement, legal structure of ownership, responsibilities, selection of site, space, layout, work flow, entrepreneurship, documentation, equipment

Patient care process: prescription handling and list of pharmaceutical abbreviation, source of offeror in prescription, steps in dispensing and dispensing technique, labeling of medicine, pharmaceutical calculation, communication skill, patient counseling, drug information, patient compliance, patient profile and drug profile.

Inventory control: Purchasing, inventory control: ABC analysis analysis, lead time, safety stock.

Ethical aspect of pharmacy: rules of moral conduct, difference of pharmacy profession from other professions

1. <u>नेपालको संविधान र सान्दर्भिक कानून तथा सम्बद्ध विविध विषय</u> <u>८ अङ्क</u>

क) नेपालको संविधान २ अङ्क

१. नेपालको संविधान

ख) सान्दर्भिक कानून ४ अङ्क

२. भ्रष्टाचार निवारण ऐन, २०५९

३. बागमती प्रदेशको प्रदेश निजामती सेवा ऐन तथा नियमावली

४. कर्मचारी समायोजन ऐन, २०७५

५. बागमती प्रदेशको प्रदेश लोक सेवा आयोग ऐन,२०७६

ग) विविध विषय २ अङ्क

६. बागमती प्रदेशको भौगोलिक, आर्थिक तथा सामाजिक क्षेत्रको जानकारी

७. बागमती प्रदेश सरकार अन्तर्गतका निकायहरू मन्त्रालय, विभाग र कार्यालयहरू

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2. नेपाली र अङ्ग्रेजी भाषाको योग्यता परीक्षण ८ अङ्क

१. नेपाली भाषा शुद्धा शुद्धिको योग्यता परीक्षणः ४ अङ्क

नेपाली भाषामा स्तरीय शुद्ध शब्द, वाक्यांश र वाक्य लेखनको लागि आवश्यक पर्ने ह्रस्व दीर्घ, ब र व, तथा श, ष, स लगायतका व्याकरणगत शुद्ध लेखनशैलीमा केन्द्रित शुद्ध शब्द, वाक्यांश र वाक्य लेखनसहितको नेपाली भाषाको शुद्धाशुद्धिको ज्ञान

(नेपाली भाषा शुद्धसँग लेख्ने सीप र लेखाइको योग्यता परीक्षण गर्ने ४ प्रश्नहरू सोधिने छ।)

नेपालको संविधानमा भएको व्यवस्थाबमोजिम नेपाली भाषा सरकारी काम काजको भाषा भएको हुँदा सरकारी सेवाका कर्मचारीले सरकारी काम काजमा लेखिने सरकारी कामकाजको नेपाली भाषाको लेखाइ वशिेष गरी पत्राचार, नर्दिेशन, आदेश, टप्पिणी र आदेश, परिपत्र, प्रेस विज्ञप्ति, सूचना, विज्ञापन, राजपत्र, प्रतिवेदन, वार्षिक प्रतविेदन, ऐन, नयिमावली तथा कार्यविधि, बैठकको माइन्युट तथा नर्णिय, प्रशंसा पत्र, निमन्त्रणा पत्र, करारनामा, सम्झौता, कबुलयितनामा, बयान, वेवसाइटको लेखाइ लगायत सबै प्रकारका नेपाली भाषाका लिखत कागजातहरू व्याकरण अनुरूप शुद्धसँग लेख्ने सीप र शुद्धा शुद्धि लेखाइको योग्यता परीक्षण गर्ने।)

3. English Language Competence Test: 4 Marks

English proficiency- 2 questions from Comprehension and 1 question each from Vocabulary and Syntatic ability)

2.1 Comprehension: 2 Marks

Questions will be asked on the passage given. The questions will try to accommodate the following areas: Fact finding, inferential, core theme, true/false identification, issues raised, and language based.

2.2 Vocabulary: 1 Mark

Questions will be asked to assess their grasp on the English language vocabulary. The questions will be of the following nature:

Meaning of the words (literal/figurative/contextual), single word for expressions, synonyms/antonyms, derivatives and homonyms/ homophones.

2.3 Syntactic ability: 1 Mark

Questions will be asked to assess the syntactic ability of the candidates. The questions will be based on the following categories:

Agreement, tense aspect, parallel structures, clauses, modifier, conditionals, phrasal expressions, shifts (tense, number, person), transformations, varieties, prepositions/conjunctions, and parts of speech.

Note: The above **English Language Competence Test** syllabus is devised for assessing the proficiency of the English language of candidates. With the view to assess the candidates' language competence, the syllabus aims:

- To test the understanding of their language through reading comprehension,
- To map the range of their vocabulary,
- To examine their syntactic ability.

The nature and standard of questions in English Language Competence Test will be such that an educated class XII level person will be able to answer them without any specialized study.

द्रष्टव्यः प्रथम पत्र सामान्य सचेतनाको बहुवैकल्पिक प्रश्न पाठ्यक्रम एकाइहरूबाट यथासम्भव Level I का ६० प्रतिशत र Level II का ४० प्रतिशत गरी प्रश्नहरू सोधिनेछ।

प्रदेश लोक सेवा आयोग

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प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरुलाई मात्र लिइने **सामूहिक परीक्षण** (Group Test) को लागि

सामूहिक परीक्षण (Group Test)

यस प्रयोजनको लागि गरिने परीक्षण १० पूर्णाङ्क र ३० मिनेट अवधिको हुनेछ जुन नेताविहिन सामूहिक छलफल को रुपमा अवलम्वन गरिने छ । दिइएको प्रश्न वा का विषयमा पालैपालोसँग निर्दिष्ट समयभित्र समूहबीच छलफल गर्दै प्रत्येक उम्मेदवारले व्यक्तिगत प्रस्तुति गर्नु पर्नेछ ।

(Individual Presentation

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आयोगका सदस्य - अध्यक्ष

आयोगका सदस्य - सदस्य

मनोविज्ञ - सदस्य

दक्ष/विज्ञ (१ जना) - सदस्य

सामूहिक छलफलमा दिइने नमूना प्रश्न वा Topic

उदाहरणका लागि उर्जा संकट,गरिवि निवारण,स्वास्थ्य बीमा,खाद्य सुरक्षा**,** प्रतिभा पलायन जस्ता topicsमध्ये कुनै एक topic मात्र दिइनेछ ।