

प्रदेश लोक सेवा आयोग,
कोशी प्रदेश, विराटनगर, नेपाल
प्रदेश निजामती सेवा तथा स्थानीय सरकारी सेवा अन्तर्गतका प्राविधिक तर्फ वन सेवा, जनरल फरेष्ट्री, फरेष्ट रिसर्च, स्वायल एण्ड वाटर कन्जरभेसन तथा वाईल्डलाईफ कन्जरभेसन समूह, पाचौँ तहको (रेन्जर वा सो सरह) पदको खुला प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

पाठ्यक्रमलाई निम्नानुसार विभाजन गरिएको छ :

परीक्षाको चरण	परीक्षाको किसिम	पूर्णाङ्क
प्रथम	लिखित परीक्षा (वस्तुगत)	१००
द्वितीय	लिखित परीक्षा (विषयगत)	१००
अन्तिम	अन्तर्वार्ता	३०

परीक्षा योजना (Examination Scheme)

१. प्रथम चरण (First Phase): लिखित परीक्षा (Written Examination)

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या X अङ्क	समय
प्रथम	सेवा सम्बन्धी विषय	१००	४०	वस्तुगत: बहुवैकल्पिक प्रश्न (MCQs)	५० प्रश्न X २ अङ्क	४५ मिनेट

२. द्वितीय चरण (Second Phase): लिखित परीक्षा (Written Examination)

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या X अङ्क	समय
द्वितीय	सेवा सम्बन्धी विषय	१००	४०	विषयगत (Subjective)	लामो उत्तरात्मक ५ प्रश्न X १० = ५० छोटो उत्तरात्मक १० प्रश्न X ५ = ५०	२ घण्टा ३० मिनेट

३. अन्तिम चरण: - अन्तर्वार्ता (Interview)

विषय	पूर्णाङ्क	परीक्षण प्रणाली	समय
व्यक्तिगत अन्तर्वार्ता (Individual Interview)	३०	मौखिक (Oral)	-

द्रष्टव्य:-

- यो पाठ्यक्रम योजनालाई प्रथम चरण (लिखित परीक्षा: वस्तुगत), द्वितीय चरण (लिखित परीक्षा: विषयगत) तथा अन्तिम चरण (अन्तर्वार्ता) गरी तीन चरणमा विभाजन गरिएको छ।
- प्रश्न पत्र अंग्रेजी वा नेपाली भाषामा 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 गरिने छ। तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन।
- परीक्षा हलमा मोबाइल फोन, स्मार्ट वाच, हेडफोन वा यस्तै प्रकारका विद्युतीय उपकरण, पुस्तक, नोटबुक, झोला लगायतका वस्तुहरू लैजान पाइने छैन।

६. विषयगत प्रश्नका लागि तोकिएका अङ्कका हकमा एउटा लामो प्रश्न वा एउटै प्रश्नका दुई वा दुईभन्दा बढी भाग (Two or more parts of a single question) वा एउटा प्रश्नअन्तर्गत दुई वा बढी टिप्पणीहरू (Short notes) सोध्न सकिनेछ।
७. परीक्षामा सोधिने प्रश्न संख्या, अङ्क र अङ्कभार यथासम्भव सम्बन्धित पत्र/विषयमा दिइए अनुसार हुनेछ।
८. द्वितीय पत्र (विषयगत प्रश्न हुने पत्र)का हकमा प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन्। परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डको उत्तर पुस्तिकामा लेख्नु पर्नेछ।
९. प्रथम र द्वितीय पत्रका पाठ्यक्रमका एकाईहरूबाट सोधिने प्रश्नहरूको संख्या देहाय अनुसार हुनेछः

प्रथम पत्रका एकाई	१	२	३	४	५	६	७	८	९	१०	११	१२	१३	जम्मा
प्रश्न संख्या	५	७	७	२	५	२	२	२	५	४	२	२	५	५०
अंक भार	१०	१४	१४	४	१०	४	४	४	१०	८	४	४	१०	१००
द्वितीय पत्र खण्ड	क							ख						
द्वितीय पत्रका एकाई	१	२	३	४	५	६	७	८	९	१०	११	१२	१३	
लामो उत्तर प्रश्न	१	१	१	०	१	०	०	०	१	०	०	०	०	५
छोटो उत्तर प्रश्न	०	१	१	१	०	१	१	१	०	१	१	१	१	१०
अंक भार	१०	१५	१५	५	१०	५	५	५	१०	५	५	५	५	१००

१०. यस पाठ्यक्रम योजना अन्तर्गतका पत्र/ विषयका विषयवस्तुमा जेसुकै लेखिएको भएतापनि पाठ्यक्रममा परेका कानून, ऐन, नियम तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भइ हटाइएका वा थप गरी संशोधन भएका) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ।
११. प्रथम चरण (First Phase) को लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरण (Second Phase) को लिखित परीक्षामा सम्मिलित गराइनेछ।
१२. लिखित परीक्षाको प्रथम चरण (First Phase) मा प्राप्त गरेको प्राप्ताङ्कको शत प्रतिशत अङ्क तथा द्वितीय चरण (Second Phase) को प्राप्ताङ्क जोडी कूल अङ्कको आधारमा लिखित परीक्षाको नतिजा प्रकाशित गरिनेछ।
१३. लिखित परीक्षामा छनौट भएका उम्मेदवारहरूलाई मात्र अन्तिम चरणको अन्तर्वार्तामा सम्मिलित गराइनेछ।
१४. लिखित परीक्षा र अन्तिम चरणको अन्तर्वार्ताको कूल अङ्क योगका आधारमा अन्तिम परीक्षाफल प्रकाशित गरिनेछ।
१५. पाठ्यक्रम लागू मिति:- २०८०/०२/२६

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स्वायल एण्ड वाटर कन्जरभेसन तथा वाईल्डलाईफ कन्जरभेसन समूह, पाचौँ तहको (रेन्जर वा सो सरह) पदको खुला
प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

प्रथम र द्वितीय पत्र: सेवा सम्बन्धी विषय

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1. General

- 1.1 The Constitution of Nepal: Policies of State about Natural resources, & Schedule 5 to 9 exclusive and concurrent list of powers (Federal, Province, Local) on forest and other natural resources
- 1.2 Local Government Operation act, 2074
- 1.3 Federation, Province and Local Level (Interrelation and Coordination) Act, 2077
- 1.4 Introduction to forestry organization: Federal and Koshi Province
- 1.5 Civil Service Act and Regulation (Federal, Provincial and Local)
- 1.6 Province Tourism Act, 2076 and regulation, 2077
- 1.7 General office management
- 1.8 Corruption control, ethics and morality
- 1.9 Vegetation types of Nepal and Koshi Province
- 1.10 Distribution of various Forest types in Nepal and Koshi Province
- 1.11 Investigation of forest and wildlife offences and filing cases against forest and wildlife offenders
- 1.12 Concept of climate change and REDD in Nepal
- 1.13 Practices of good governance in natural resource management
- 1.14 Forest parastatals in Nepal focusing Nepal Ban Nigam Limited, Forest Product Development Board and Herb Production and Processing Company Limited

2. Silviculture

- 2.1 Common silvicultural terms, locality factors, plant succession, silviculture system practices in Koshi Province
- 2.2 Basic concept of Silvicultural systems (Clearfelling, shelterwood, selection and Coppice system) and implication
- 2.3 Silviculture of indigenous tree species (*Shorea robusta*, *Dalbergia latifolia*, *Pterocarpus marsupium*, *Terminalia tomentosa*, *Adina cordifolia*, *Syzygium cumini*, *Toona ciliata*, *Lagerstroemia parviflora*, *Dalbergia sissoo*, *Acacia catechu*, *Bombax ceiba*, *Alnus nepalensis*, *Schima wallichii*, *Castanopsis spp*, *Rhododendron arboretum*, *Pinus roxburghii*, *Pinus wallichiana*, *Cedrus deodara*)
- 2.4 Silviculture of exotic tree species (*Tectona grandis*, *Eucalyptus camaldulensis*, *Pinus patula*, *Swietenia macrophylla*, *Populus ciliata*, *Pterocarpus santalinus*, *Santalum album*, *Acacia mangium*, *Acacia auriculiformis*)
- 2.5 Natural forest and man-made forest; methods and importance of natural and artificial regeneration; information of the factors that affect the regeneration
- 2.6 Common terms related to nursery and seedling production; importance of seed production; and methods of seed collection, extraction, treatment and storage of commonly planted tree species in Koshi Province
- 2.7 Nursery techniques and Plantation techniques of commonly planted tree species in Koshi Province; Choice of species for different land use practices
- 2.8 Application of tending operations in plantation, natural and private forest

3. Forest Management

- 3.1 Common forest management terms; objectives and scope of forest management; history of forest management in Nepal
- 3.2 Ecological aspects of forest management with quantitative analysis of plant diversity
- 3.3 Definition and concept of normal forest, implication of normality concept in even aged and uneven aged forest, abnormality; and fundamental concepts of growing stock, increment, rotation, conversion, yield regulation, determination of site quality
- 3.4 Provisioning, regulating, cultural and supportive ecosystem services and concept of payments for ecosystem services (PES)
- 3.5 Principle, criteria and indicators of sustainable forest management; forest certification and its implication in Koshi Province
- 3.6 Scope of forest management plan and forest operational plan; Preparation of community forest operational plan and implementation
- 3.7 General concept of forest valuation; forest valuation techniques, methods of calculating stumpage values; demand, supply and price determination of forest products
- 3.8 Climate change, mitigation and adaption measures
- 3.9 Plantation forest in Nepal (*Sagarnath* and *Ratuwa Mai*)

4. Forest Mensuration

- 4.1 Measurement of standing tree, felled trees and logs
- 4.2 Volume table, yield table, biomass table
- 4.3 Calculation of tree volume by different methods, tree basal area, volume of stacked woods and biomass
- 4.4 Forest sampling techniques, accuracy, reliability and precision in forest mapping and inventor
- 4.5 Forest inventory practices: trees, herbs and non-timber forest products

5. Soil and Water Conservation

- 5.1 Basic concept of soil ecology; physical, chemical and biological properties of soil; soil profiles and soil organic matters; soil formation process; soil map; soil microorganisms; soil nutrients; effects of forest vegetation/forest types on soil
- 5.2 Major soil types of Koshi Province
- 5.3 Land evaluation and land use; land capability classification
- 5.4 Types of soil erosions and their preventive and control measures
- 5.5 Soil and water conservation structures - breast walls, retaining wall, check dams, contour planting, trenching, bunding, terracing, grass planting, hedgerow plantation, conservation ponds, slope stabilization, roadside stabilization
- 5.6 Hydrological cycle and its importance in soil conservation and watershed management
- 5.7 Bioengineering, soil fertility and indigenous soil fertility management practice, Conservation farming
- 5.8 Integrated watershed management practices and efforts in Koshi Province
- 5.9 Tools and techniques for conservation education as extension practices in soil and water conservation
- 5.10 Low-cost soil conservation techniques and their application
- 5.11 Programs and efforts in conserving soil and water resources in *Chure* region in Koshi Province

6. Forest Research and Survey

- 6.1 Fundamental concepts, definition and classification of survey and their applicability in forest management
- 6.2 Chain survey, compass survey, plane table survey and simple levelling
- 6.3 Instrument used for forest survey and inventory in Nepal
- 6.4 Forest inventory, sampling and its types.
- 6.5 Survey with GPS; concept of GIS

- 6.6 Latest Forest Resource Assessment in Nepal and it's major findings
- 6.7 General concept of forest research
- 6.8 Current challenges of forestry research in Nepal

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7. Agroforestry and Private Forestry

- 7.1 Introduction, concept, principles, characteristics and scope of agroforestry
- 7.2 Suitable plant species selection for agroforestry
- 7.3 Major Agroforestry Systems in High Mountains, Mid Hills and Terai
- 7.4 Practices of Fruit, vegetables, animal-based agroforestry production in Koshi Province
- 7.5 Design of small agroforestry project
- 7.6 Significance and new developments in agroforestry in Koshi Province
- 7.7 Role of agroforestry and private forestry in forest and biodiversity conservation

8. Forestry Extension

- 8.1. Concept of forestry extension and communication
- 8.2. Various methods of extension applied in forestry sector
- 8.3. Ongoing extension activities in participatory forest management approaches (community, collaborative, leasehold and private forestry, Tree Outside Forest)

9. Wildlife and Protected Area management

- 9.1 Different terminologies used in wildlife management; basic concept on wildlife values, wildlife population, population estimation techniques
- 9.2 Protected, Threatened, Rare, endangered and endemic wild animals in Nepal
- 9.3 National Parks, Wildlife Reserves, Conservation Areas and buffer zones in Nepal, with special attention to Koshi Province
- 9.4 Ecological characteristics of mammals (Elephant, Snow leopard, Blue Sheep, Musk Deer, Rhino, Wild Water Buffalo, Pangolin, Red Panda, Dolphin), Protected Birds and animals, insects (termite, bee, butterfly)
- 9.5 Rules governing wildlife hunting or fishing outside the protected areas but within the national forest area
- 9.6 Eco-tourism products and management; Visitors management; Tourism impacts on social and biological environment; tourism destinations of Koshi Province
- 9.7 Status of biodiversity (flora and fauna, forest and ecosystem types) in Nepal
- 9.8 Methods and techniques of wildlife census
- 9.9 Wildlife population and habitat management approaches
- 9.10 Status and distribution of Ramsar sites in Nepal
- 9.11 Introduction and status of biodiversity,
- 9.12 Challenges, opportunity and threats for conservation of biodiversity in Nepal
- 9.13 Various approaches for biodiversity conservation in Nepal
- 9.14 Human wildlife (specially elephant) conflict, its impact on conservation, and mitigation measures

10. Medicinal and Aromatic Plants

- 10.1 Silvicultural of commercial NTFP Species
- 10.2 High value medicinal plants
- 10.3 General status of MAPs and other important NTFPs in Nepal and Koshi Province
- 10.4 Important Plant species of medicinal and / or aromatic use value, their identification, harvesting techniques and utilization practices
- 10.5 Medicinal and/or aromatic plant species restricted for export in crude from Nepal
- 10.6 Forest (specially to NTFPS) based industries and values chain of NTFPs and MAPs in Nepal
- 10.7 Processing of medicinal and aromatic plants

11. Forest Protection

- 11.1 Plant disease, symptoms and effects; fungal disease; important nursery pest and their control
- 11.2 Injury to forests due to fires, grazing, mining, forest encroachment, deforestation, illegal felling, shifting cultivation, improper cultivation practices, domestic animals, wild animals, invasive species, weeds, frost, flood, landslides, drought, etc. and its prevention and remedial measures

12. Forest Harvesting and Utilization

- 12.1 Forest products harvesting techniques; forest products extraction; transportation of forest products; log storage and depot management; log grading
- 12.2 Harvesting and distribution systems for major forest products in Nepal
- 12.3 Harvesting and distribution systems of non-woody forest products
- 12.4 Agencies involved in harvesting and distribution of forest products in Nepal
- 12.5 Concept of ergonomics, safety measures
- 12.6 Wood structure, properties and defects; seasoning and preservation; wood identification
- 12.7 Major forest-based industries in Koshi Province; raw materials and manufacturing process of different forest-based industries
- 12.8 Forest based enterprise identification and prioritization; value chain of forest product-based enterprise

13. Forest Policy and legal instruments

- 13.1 International conventions and treaties such as CITES, Ramsar, CBD, UNCCD, UNFCCC
- 13.2 Forest Act, 2076 and Regulation 2079, Koshi Province Forest Act 2077
- 13.3 Environment Protection Act 2076 and Regulation, Koshi Province Environment Protection Act 2076 and Regulation 2077
- 13.4 Soil and Watershed Conservation Act 2039
- 13.5 National Parks and Wildlife Conservation Act 2029 (with amendments) and Regulation 2030 (with amendments)
- 13.6 CITES Act 2073 and Regulation 2076
- 13.7 National Forest Policy 2075 and Forest Sector Strategy 2072
- 13.8 National Environment Policy 2076
- 13.9 Land Use Policy 2072
- 13.10 Buffer Zone Management Regulation 2052
- 13.11 REDD Strategy 2075 (2018)
- 13.12 Wetland Policy 2069
- 13.13 National Climate Change Policy 2076 (2019)
- 13.14 National Adaptation Plan (NAP) 2021-2050
- 13.15 President Chure-Tarai Madhesh Conservation and Management Master Plan
- 13.16 Various guidelines and directives related to forestry sector
- 13.17 Salient features of forest product sales and distribution guidelines
- 13.18 Guidelines for community forestry and community forestry inventory
- 13.19 NTFP inventory guideline, various guidelines and directives related to forestry sector

Model Questions (MCQs)

1. A tree with a small crown in the general canopy level and receives little direct light from the side is called_____
 - A. Dominant
 - B. Codominant
 - C. Intermediate
 - D. Suppressed
2. Reserpine is obtained from_____
 - A. Dioscorea
 - B. Taxus
 - C. Rauvolfia
 - D. Papaver
3. According to Provincial Act, 2077, who is the concern authority to approve Five Years District Forest Management Operation Plan_____
 - A. Division Forest Office
 - B. Province Directoriote
 - C. Provincial Ministry of Industry, Tourism, Forest and Environment
 - D. Federal Ministry of Forest and Environment
4. Horn of Rhino is outgrowth of _____
 - A. Hair
 - B. Bone
 - C. Nose
 - D. Eye
5. Thinning overstocked stands in order to manage or control pests is a _____ pest management strategy
 - A. Biological
 - B. Chemical
 - C. Silvicultural
 - D. Regulatory
6. You are using a clinometer to determine the tree height on the ground from distance of 40 feet. Your reading to the top of the tree is $+45^\circ$ and bottom reading is $+20^\circ$. What is the height of the tree?
 - A. 23.9 feet
 - B. 40 feet
 - C. 33.9 feet
 - D. 43.9 feet
7. Water holding capacity is low in_____
 - A. Sandy soil
 - B. Clay soil
 - C. Loamy soil
 - D. Gravel

Model Questions (Subjective)

1. Define silviculture. Briefly discuss about the practices of silviculture in afforestation and reforestation programs in Nepal. [3+7]
2. What is forest inventory and why it is needed for forest management? Discuss in brief. [3+7]
3. What are the major components of agroforestry? Examine the goods and services of existing agroforestry practices in Koshi Province. [4+6]
4. Write Short note on: [5+5]
 - i. Importance GIS in forest management
 - ii. Payment for ecosystem services
5. Explain the emerging issues in managing community-based forest management in Nepal with examples from Koshi Province. [5]