

प्रदेश लोक सेवा आयोग

गण्डकी प्रदेश

प्रदेश वन सेवा, वातावरण समूह, सातौं तह, वातावरण निरीक्षक पदको खुला तथा अन्तरतह प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छ :

प्रथम चरण :-	लिखित परीक्षा (Written Examination)	पूर्णाङ्क :- २००
द्वितीय चरण :-	(क) सामूहिक परीक्षण (Group Test)	पूर्णाङ्क :- १०
	(ख) अन्तर्वार्ता (Interview)	पूर्णाङ्क :- ३०

परीक्षा योजना (Examination Scheme)

प्रथम चरण : लिखित परीक्षा (Written Examination)

पूर्णाङ्क :- २००

पत्र	विषय	खण्ड	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या × अङ्क	समय
प्रथम	General Subject	Part I: General Awareness & General Ability Test	१००	४०	वस्तुगत (Objective)	बहुवैकल्पिक प्रश्न (MCQs)	५० प्रश्न × १ अङ्क
		Part II: General Technical Subject					५० प्रश्न × १ अङ्क
द्वितीय	Technical Subject		१००	४०	विषयगत (Subjective)	छोटो उत्तर लामो उत्तर	४ प्रश्न × ५ अङ्क र १० प्रश्न × १ अङ्क

द्वितीय चरण : सामूहिक परीक्षण (Group Test) र अन्तर्वार्ता (Interview)

पूर्णाङ्क :- ४०

पत्र / विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	समय
सामूहिक परीक्षण (Group Test)	१०		सामूहिक छलफल (Group Discussion)	३० मिनेट
अन्तर्वार्ता (Interview)	३०		बोर्ड अन्तर्वार्ता (Board Interview)	-

द्रष्टव्य :

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
- प्रथमपत्र र द्वितीयपत्रको लिखित परीक्षा छुट्टाछुट्टै 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 ।
- बहुवैकल्पिक प्रश्नहरू हुने परीक्षामा कुनै प्रकारको क्याल्कुलेटर (Calculator) प्रयोग गर्न पाइने छैन ।
- विषयगत प्रश्नहरूको हकमा तोकिएको अंकको एउटा लामो प्रश्न वा एउटै प्रश्नका दुई वा दुई भन्दा बढी भाग (Two or more parts of a single question) वा एउटा प्रश्न अन्तर्गत दुई वा बढी टिप्पणीहरू (Short notes) सोध्न सकिने छ ।
- द्वितीय पत्रमा (विषयगत प्रश्न हुनेका हकमा) प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन् । परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डको उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
- यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जसुकै 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 सम्झनु पर्दछ ।
- प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
- पाठ्यक्रम लागू मिति : २०८०।०६।०९

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प्रदेश वन सेवा, वातावरण समूह, सातौं तह, वातावरण निरीक्षक पदको खुला तथा अन्तरतह
प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

प्रथम पत्र (Paper I): General Subject

Part (I) : - General Awareness & General Ability Test (50 Marks)

1. **General Awareness and Contemporary Issues (25 ×1 Mark = 25 Marks)**
 - 1.1 Physical, socio-cultural and economic geography and demography of Nepal
 - 1.2 Major natural resources of Nepal
 - 1.3 Geographical diversity, climatic conditions, and livelihood & lifestyle of people
 - 1.4 Notable events and personalities, social, cultural and economic conditions in modern history of Nepal
 - 1.5 Current periodical plan of Nepal and Gandaki province
 - 1.6 Information on sustainable development, environment, pollution, climate change, biodiversity, science and technology
 - 1.7 Nepal's international affairs and general information on the UNO, SAARC & BIMSTEC
 - 1.8 The Constitution of Nepal (From Part 1 to 5 and Schedules)
 - 1.9 Governance system and Government (Federal, Provincial and Local)
 - 1.10 Provisions of civil service act and regulation relating to constitution of civil service, organizational structure, posts of service, fulfillment of vacancy and code of conduct
 - 1.11 Functional scope of public services
 - 1.12 Public Service Charter
 - 1.13 Concept, objective and importance of public policy
 - 1.14 Fundamentals of management: planning, organizing, directing, controlling, coordinating, decision making, motivation and leadership
 - 1.15 Government planning, budgeting and accounting system
 - 1.16 Major events and current affairs of national and international importance
2. **General Ability Test (25 ×1 Mark = 25 Marks)**
 - 2.1 **Verbal Ability Test (8×1 Mark = 8 Marks)**

Jumble words, Series, Analogy, Classification, Coding-Decoding, Matrix, Ranking Order Test, Direction and Distance Sense Test, Common Sense Test, Logical Reasoning, Assertion and Reason, Statement and Conclusions
 - 2.2 **Numerical Ability Test (9×1 Mark = 9Marks)**

Series, Analogy, Classification, Coding, Arithmetical reasoning/operation, Percentage, Ratio, Average, Loss & Profit, Time & Work, Data interpretation & Data verification
 - 2.3 **Non-verbal/Abstract Ability Test (8×1 Mark = 8 Marks)**

Figure Series, Figure Analogy, Figure Classification, Figure Matrix, Pattern Completion/Finding, Analytical Reasoning Test, Figure Formation and Analysis, Rule Detection, Water images, Mirror images, Cubes and Dice & Venn-diagram

Part (II) : - General Technical Subject (50 Marks)

Section A- 20 % Marks

1. ENVIRONMENTAL FACETS

1.1 Environment: Concept, Scope and Practices

- 1.1.1 Development of human society and environment
- 1.1.2 Physical, biological and socio-economic aspects of environment and their interrelationships
- 1.1.3 Environmental degradation and manifestations (land, water and air)
- 1.1.4 Environmental movements and environmental ethics

1.2 Ecology

- 1.2.1 Population characteristics and regulations
- 1.2.2 Community characteristics, regulation and succession
- 1.2.3 Ecosystem dynamics: energy flow, biogeochemical cycles
- 1.2.4 Terrestrial biomes and characteristics

1.3 Environmental Geology

- 1.3.1 Geological materials and structures
- 1.3.2 Weathering and erosion: types, cycle and control
- 1.3.3 Mass movement: causes and mechanisms
- 1.3.4 Fluvial, glacial and aeolian environmental processes

1.4 Climatology and Hydrometeorology

- 1.4.1 Horizontal and vertical temperature distribution
- 1.4.2 Mechanisms of wind development, air masses dynamics
- 1.4.3 Climatic systems, distribution and classifications
- 1.4.4 Floods: classification, causes, triggering factors

1.5 Global Environmental Issues

- 1.5.1 Global warming
- 1.5.2 Green economy
- 1.5.3 Payment for ecosystem services
- 1.5.4 Ozone layer depletion and acid rain

2. ENVIRONMENTAL RESOURCES

2.1 Water Resources

- 2.1.1 Water resources: sources, extent and assessment
- 2.1.2 Integrated Water Resource Management (IWRM)
- 2.1.3 Water resources of Nepal
- 2.1.4 Problems of water resource management in Nepal

2.2 Food Resources

- 2.2.1 Major food resources and production
- 2.2.2 Human nutrition and health
- 2.2.4 Food resources of Nepal

2.3 Energy Resources

- 2.3.1 Energy resources: sources and classification

- 2.3.2 Alternative energy resources
- 2.3.3 Environmental issues of energy use
- 2.3.4 Energy resource conservation practices
- 2.3.5 Energy resources of Nepal

2.4 Forest Environment and Biodiversity

- 2.4.1 Forest ecosystem; role of forest in environment
- 2.4.2 Forest types and biodiversity status of Nepal
- 2.4.3 Ex-situ and in-situ conservation
- 2.4.4 Biodiversity conservation approaches
- 2.4.5 Carbon sequestration

2.5 Resource Economics

- 2.5.1 Micro-economic analysis for accounting environmental resources
- 2.5.2 Environmental Kuznets curve, cost benefit analysis and resource accounting
- 2.5.3 Economic and regulatory instruments to control pollution

Section B- 30 % Marks

3. ENVIRONMENTAL POLLUTION AND ENGINEERING

3.1 Water Pollution

- 3.1.1 Point and non-point sources and categories of water pollutants
- 3.1.2 Water pollutants effect on human health and ecosystems
- 3.1.3 Standard methods of water analysis
- 3.1.4 Water and wastewater treatment technologies

3.2 Air Pollution

- 3.2.1 Sources and categories of air pollutants
- 3.2.2 Emission, transport, receptors of air pollutants, criteria air pollutants
- 3.2.3 Air pollutants effects on human health, property and visibility
- 3.2.4 Indoor air pollution
- 3.2.5 Air pollution measurement and emission estimates
- 3.2.6 Air pollution control technologies

3.3 Noise Pollution

- 3.3.1 Noise sources and criteria
- 3.3.2 Health effects of noise and control mechanisms

3.4 Waste Management

- 3.4.1 Sources, types and composition of solid wastes
- 3.4.2 Solid waste management systems
- 3.4.3 Issue, generation and management of e-waste, hazardous and hospital waste
- 3.4.4 Management of industrial and agricultural chemical pesticides
- 3.4.5 3R (Reduce, Reuse and Recycle) Principles of Solid Waste Management
- 3.4.6 Resource Recovery
- 3.4.7 Ultimate disposal of refuse: Sanitary landfill
- 3.4.8 Integrated Management of Municipal Solid Waste (MSW)

3.5 Toxicology and Eco-toxicology

- 3.5.1 Acute, sub-acute and chronic toxicity
- 3.5.2 Dose and frequency response relationships
- 3.5.3 Bioassays and attributes for predicting species response to pollution stress

3.6 Climate Change

- 3.6.1 Climate variability and theories of climate change
- 3.6.2 Climate models and model-based projections of greenhouse effect
- 3.6.3 Climate change impacts: agriculture and food security, water resources, energy, human health, biodiversity, settlement and infrastructure and livelihood
- 3.6.4 Vulnerability assessment of climate change and mitigation and adaptation approaches (NAPA, LAPA)

Section C- 20 %Marks

4. ENVIRONMENTAL MANAGEMENT SYSTEMS

4.1 Environmental Assessment

- 4.1.1 Environmental assessment: evolution in global and national perspectives
- 4.1.2 Environmental assessment: process, practices, methods and tools
- 4.1.3 Strategic environmental assessment for decision making and integrated planning

4.2 Environmental Management Systems (EMS) & Modeling

- 4.2.1 Concept, components and stages of EMS
- 4.2.2 ISO 14000 series, standards and certification systems
- 4.2.3 Life Cycle Assessment (LCA), Overview, history, LCA types, principles and Methods, and application of LCA
- 4.2.4 Environmental labeling
- 4.2.5 Types and importance of environmental models

4.3 Remote Sensing & GIS

- 4.3.1 Concept, scope and stages in remote sensing and GIS
- 4.3.2 Remote sensing image: acquisition, resolution, analysis and interpretation
- 4.3.3 Application of remote sensing and GIS in environment assessment

4.4 Environmental Statistics

- 4.4.1 Sampling, data analysis and interpretation
- 4.4.2 Central tendency, measures of dispersion
- 4.4.3 Correlation and regression
- 4.4.4 Parametric and non-parametric tests

4.5 Environmental Governance

- 4.5.1 Overview of global environmental issues
- 4.5.2 Human dimension and environment and Global environmental governance
- 4.5.3 Major elements of environmental governance (participation, transparency, accountability and governance norms)
- 4.5.4 Adaptive management and sustainability

Section D- 30 % Marks

5. LEGAL FRAMEWORKS

5.1 Guidelines and Standards

Guidelines and Standards Relating to Air (Ambient, Indoor and Stack) and Water (Tolerance Limits for Industrial Effluents to be Discharged into Public Sewers and Inland Surface Waters); Specific Industrial Effluent Standards, Sectoral Standards (Health and Infrastructures Development)

5.2 Existing Legislations

Constitution of Nepal; Environmental Protection Act Nepal and Gandaki Province; Environment Protection Rules; National EIA Guidelines; EIA Guidelines for Forestry Sector; EIA Guidelines for Industry Sector; Plant Protection Act; National Parks and Wildlife Conservation Act; Water Resources Act; Forest Act; Soil and Watershed Management Act; Solid Waste Management Act; Pesticides Act; Pesticide Regulation; Hydropower Development Policy; Climate Change Policy and Var Peepal, Samee and Chautaro Conservation Act of Gandaki Province, Initiations related to lake and wetland conservation in Gandaki province

5.3 International Treaties, Protocols & Conventions

World Heritage Convention, 1972; Convention on International Trade in Endangered Species of Wild Flora and Fauna, 1973 (CITIES); World Charter for Nature 1982; Convention on Biological Diversity, 1992; United Nations Framework Convention on Climate Change, 1992 and its relevant IPCC resolutions and agreements. United National Convention to Combat Desertification, 1994; Kyoto Protocol, 1997; Vienna Convention for the Protection of the Ozone Layer, 1985; Montreal Protocol on Substances that Deplete Ozone Layer, 1987; Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal, 1989; Stockholm Convention on Persistent Organic Pollutants, 2004

6. CURRENT ENVIRONMENTAL ISSUES

6.1 Urban Environment

- 6.1.1 Urbanization and its implications on environment (sanitation, solid and hazardous waste, air pollution, water pollution, groundwater depletion, food security)
- 6.1.2 Urbanization infrastructures and environment (housing, water supply and sanitation, waste management, transportation, electricity, markets and commercial areas, religious and heritage sites, open spaces and recreational areas)
- 6.1.3 Concept of urban planning and sustainable cities

6.2 Land use and Watershed Management

- 6.2.1 Land use and environment (land use pattern and zoning; Guided Land Development (GLD) and land pooling)
- 6.2.2 Principles of land use and land reclamation
- 6.2.3. Factors governing land utilization and land use pattern
- 6.2.4 Scenario of watershed management in Nepal
- 6.2.5 Development and conservation challenges in watershed management
- 6.2.6 Watershed as ecosystems; Upstream-downstream linkages; Measures for watershed conservation

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6.2.7 Land degradation neutrality approaches and practices

6.3 Agriculture and Food Security

6.3.1 Farming systems

6.3.2 Modern agriculture and its impacts on environment, green revolution

6.3.3 Sustainable agriculture and food aid policies

6.3.4 Food security in Nepal

6.4 Disaster Risks & Vulnerability Assessment

6.4.1 Hazard, disaster, risk, exposure and vulnerability analysis

6.4.2 Disasters due to earthquake, landslide and river bank erosion, flood, GLOF,
drought, epidemics, fire and industrial accidents

6.4.3 Disaster risk management and practices
