

नेपाल विद्युत प्राधिकरण

प्राविधिक सेवा, सबै समूह/उपसमूह, तह ७, विभिन्न पदको लागि खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

पाठ्यक्रम योजनालाई निम्नानुसारका दुई चरणमा विभाजन गरिएको छ ।

प्रथम चरण: लिखित परीक्षा पूर्णाङ्क :- २००

द्वितीय चरण: अन्तर्वार्ता पूर्णाङ्क :- ३०

१. प्रथम चरण: लिखित परीक्षा (Written Examination) पूर्णाङ्क :- २००

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	खण्ड	परीक्षा प्रणाली	प्रश्नसंख्या × अङ्क	समय	
प्रथम	सामान्य ज्ञान र बौद्धिक ज्ञान	१००	४०	(क)	वस्तुगत बहुवैकल्पिक प्रश्न (MCQ)	५० प्रश्न * १ अङ्क	४५ मिनेट	
	संस्थागत एवं सामाजिक मामिला			(ख)	विषयगत	छोटो उत्तर आउने प्रश्न लामो उत्तर आउने प्रश्न	६ प्रश्न * ५ अङ्क २ प्रश्न * १० अङ्क	१ घण्टा ३० मिनेट
द्वितीय	सेवा सम्बन्धी विस्तृत ज्ञान	१००	४०	(क)	विषयगत	छोटो उत्तर आउने प्रश्न लामो उत्तर आउने प्रश्न	२ प्रश्न * ५ अङ्क ४ प्रश्न * १० अङ्क	३ घण्टा
						(ख)	विषयगत	

२. द्वितीय चरण: अन्तर्वार्ता (Interview) पूर्णाङ्क :- ३०

विषय	पूर्णाङ्क	परीक्षा प्रणाली
अन्तर्वार्ता	३०	मौखिक

द्रष्टव्य :

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।
- प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- लिखित परीक्षामा सोधिने प्रश्न संख्या र अङ्कभार यथासम्भव सम्बन्धित पत्र / विषयमा दिईए अनुसार 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 लेखदा 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 ।
- विषयगत प्रश्नहरूको हकमा 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 सकिनेछ ।
- विषयगत प्रश्न हुने पत्र/विषयका प्रत्येक खण्डका प्रश्नका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन्। परीक्षार्थीले प्रत्येक खण्डका प्रश्नको उत्तर सोही खण्डको उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
- यस पाठ्यक्रम योजना अन्तर्गतका पत्र/ विषय विषयवस्तुमा जुनसुकै कुरा लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, ऐन, नियम, विनियम तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडी (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 स्वीकृत मिति :- २०८०/०८/२१

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प्रथम पत्र

खण्ड (क) सामान्य ज्ञान र बौद्धिक परीक्षण: ५० अङ्क

1. सामान्य ज्ञान: (३०x१ = ३० अङ्क)

- 1.1 नेपालको भूगोल र आर्थिक तथा सामाजिक क्रियाकलाप: धरातलीय स्वरूपको किसिम र विशेषता, नेपालमा पाईने हावापानीको किसिम र विशेषता, नदीनाला, तालतलैया, खनिज पदार्थ, प्राकृतिक स्रोत साधन, विद्युत, शिक्षा, स्वास्थ्य र सञ्चारसम्बन्धी जानकारी
- 1.2 नेपालको सामाजिक एवं सांस्कृतिक अवस्था: प्रथा, परम्परा धर्म, जातजाति, भाषाभाषी, कला, संस्कृति र साहित्य
- 1.3 नेपालमा विद्युत विकास, उर्जाका स्रोत र सम्भावना
- 1.4 नेपालको संघीय, प्रादेशिक र स्थानीय संरचना तथा शासन प्रणाली सम्बन्धी जानकारी
- 1.5 विश्वको भूगोल: महादेश, महासागर, अक्षांश, देशान्तर, अन्तर्राष्ट्रिय तिथि रेखा, समय, पर्वतश्रृङ्खला, नदी, हिमनदी, ताल, हिमताल
- 1.6 अन्तर्राष्ट्रिय सम्बन्ध तथा संघ/ संस्था: संयुक्त राष्ट्र संघ र यसका एजेन्सीहरू (UNO and Its Agencies) दक्षिण एशियाली क्षेत्रीय सहयोग संगठन (SAARC) सम्बन्धी जानकारी
- 1.7 राष्ट्रिय तथा अन्तर्राष्ट्रिय महत्वका समसामयिक घटना तथा नविनतम गतिविधिहरू

2. बौद्धिक परीक्षण: (२०x१ = २० अङ्क)

2.1 Verbal and Non-verbal Aptitude:

Vocabulary, Alphabetical ordering of words, Classification, Coding-Decoding, Insert the missing character, Direction and Distance sense test, Ranking order test, Relationship Test, Logical sequence of words, Common sense test, Assertion and Reason, Logical reasoning, Figure series, Figure analogy, Figure Classification, Figure Matrix, Pattern completion/finding, Construction of squares and triangles, Analytical reasoning.

2.2 Numerical Ability and Quantitative Aptitude

Arithmetical reasoning, Insert the correct mathematical signs, Decimal and Fraction, Percentage, Ratio, Average, Profit and Loss, Time and work.

खण्ड (ख) संस्थागत एवं सामाजिक मामिला: ५० अङ्क

1. Constitution, Act and Rules

- 1.1. Constitution of Nepal
- 1.2. Nepal Electricity Authority Act, 2041
- 1.3. Electricity Regulatory Commission Act, 2074
- 1.4. Electricity Act, 2049 and Electricity Regulation, 2050
- 1.5. Public Procurement Act, 2063 and Regulations, 2064
- 1.6. Nepal Electricity Authority, Present Financial Administration bylaws
- 1.7. Nepal Electricity Authority, Present Employee Service bylaws
- 1.8. Corruption Control Act, 2059
- 1.9. Good Governance (Management and Operation) Act, 2064
- 1.10. Land Acquisition Act, 2034
- 1.11. Environment Protection Act, 2076 and Environment Protection Regulation, 2077

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2. **Electricity Development in Nepal**
 - 2.1 History of power development in Nepal; Energy supply demand trends
 - 2.2 Recent trends in power sector reform; Hydropower potential of Nepal and prospects and challenges for its development
 - 2.3 Nepal Electricity Authority: objective, functions, corporate structure, achievement and challenges
 - 2.4 Concept of NEA Restructuring in federal context
 - 2.5 Reliable and Equality Electricity Services in Administration Development (Nepal: Prospects and Challenges)

3. **Development**
 - 3.1 General concept of development administration
 - 3.2 Planning in Nepal: efforts, achievement and challenges
 - 3.3 Sustainable Development
 - 3.4 Public Private Partnership
 - 3.5 General Concept of Public Administration and its Function

4. **Management and Financial Analysis**
 - 4.1 Concept of Management
 - 4.2 Motivation, Leadership, Control, Coordination and Team work, Decision making
 - 4.3 Corporate planning and strategic management
 - 4.4 Corporate social responsibility
 - 4.5 Project management: Use of network models- CPM, PERT, human resource planning and resource scheduling; project monitoring and control; project control cycle
 - 4.6 Financial analysis: Methods of financial analysis such as benefit cost ratio, internal rate of return (EIRR and FIRR), net present value, payback period, minimum attractive rate of return and their application; tariff structure

5. **New Trends of Power Sector**
 - 5.1 Various Sources of Energy: trend, possibilities and challenges
 - 5.2 Role of IPP (Independent Power Producer), opportunities and challenges
 - 5.3 Power Purchase Agreement (PPA), Power development agreement (PDA)
 - 5.4 Concept of energy exchange pool market, energy banking
 - 5.5 Regional and sub-regional interconnections with Nepalese grid

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प्राविधिक सेवा, विविध समूह, वातावरण उपसमूह, तह-७ वातावरणविद् पदको खुला प्रतियोगितात्मक
परीक्षाको पाठ्यक्रम

द्वितीय पत्र:

सेवा सम्बन्धी विस्तृत ज्ञान

खण्ड (क) : ५० अङ्क

1. **Basic Concept of Environmental Science:**

Concept of environment and environmental science and its importance; Life supporting system, Major environmental issues, Limiting factors for life, Ecosystem dynamics, Biotic community analysis, Biodiversity, Ecological niche, Speciation, community, dynamics, Positive and negative biotic interactions; Functions of biotic community in maintaining the ecological balance, Population growth forms, Population distribution, Concept of density dependent and independent factors. Environmental chemistry and atmospheric environment

2. **Natural Resources of Nepal:**

Water resources (surface and underground) and their utilization; Forest resources, soil resources, Wildlife resources, Wind resources, Mineral resources: metallic and non-metallic, Energy (renewable and non-renewable) resources: Fossil fuels, Geothermal, Solar, Biomass, Green energy; Natural Resource utilization policies, Contribution of the natural resources in nation development

3. **Climate Change:**

Climate change and variability, Paleoclimatology, Climate during post glacial period, Causes of climate change: natural and anthropogenic, Greenhouse effects, Historical emission of CO₂, Climate change and its impacts on agriculture, forest, water resources, ecosystem and biodiversity, human health and natural disasters, Biosphere and climate system; Sensitivity of community to climate change, Climate modelling and analysis, Global and regional assessments of climate change, Climate change scenarios in Nepal, Climate change mitigation and adaptation, National Adaptation Program of Action (NAPA) and Local Adaptation Plans for Action (LAPA) process in Nepal, Kyoto protocol; Possible impacts of climate change in hydropower generation in Nepal; Global warming and its impacts

4. **Environmental Pollution:**

Types of pollutions, Types of water pollutants and sources, Water quality criteria and standards, Method of water analysis, Waste water treatment and other types of water pollution control, Economics of water pollution and water pollution control, water pollution control legislation. Sources and causes of air pollution, Influence of weather and other synergistic factors in air pollution, Effects of air pollution on human health, animals, plants, microorganism, ecosystems, materials and climate, Acid rain, The greenhouse effects and effects of air pollution in ozone shield, Air quality criteria and standards, Methods of air analysis, The economics of air pollution, Air pollution related laws, Air pollution control strategies and technologies. Noise pollution: causes, impacts and controls, Solid waste management, Plastic pollution (macro-, micro-, nano- plastic); Soil pollution its impacts and remedies

5. **Environmental Management and Conservation:**

Concept of environmental conservation and preservation in Nepal, Resource management, Forest and forest type of Nepal, Categories of forest in Nepal, Status of wildlife in Nepal, Protected areas, Methods of wildlife study, Threat to wildlife, Wildlife conservation

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issues, Approaches of conservation, people's participation in conservation of wildlife, in-situ and ex-situ conservation, Animal reintroduction program, Regional and global wildlife conservation conventions. Soil conservation, conservation tillage, improving energy efficiency, advantages and disadvantages of using hydropower, World human population, Environmental and socioeconomic factors affecting birth, World agricultural systems, major types of agriculture, Ecological restoration

6. **Environmental Earth Science:**

Hydrological processes in different climatic zones: Process of precipitation, evaporation, snowmelt, runoff generation. Soil-water dynamics and ground water recharge, Hyetograph, Intensity-duration of rain fall, River discharge. Floods.

Geological process and mechanisms: weathering and erosion, fluvial, glacial and periglacial process. Earth hazards: Concept of hazard, exposure, vulnerability and risk, Landslide, Glacial Lake Outburst Flood (GLOF), Earthquake and seismicity of Nepal, Hazard assessment and mapping.

खण्ड (ख) ५० अंङ्क

7. **Fundamental Approach for Environmental Impact Analysis (EIA)**

Different levels of assessments such as Environmental Impact Assessment (EIA) and Initial Environmental Examination (IEE) and their importance, Basic concepts for EIA and IEE process in general, Steps in EIA process in Project Planning, Preparation of Scoping Document, Terms of Reference, Methods of Impacts Analysis, Assessment of the impacts on: Physical environment, biological environment: aquatic and terrestrial environments, hydrological environment, atmospheric environment, socioeconomic

Knowledge of public involvement in the EIA and IEE process as per the EPA and EPR method and guidelines for public consultations, Identification of the stakeholders of the project.

8. **Environmental Impact Management of Hydropower Projects**

Components of Hydropower Project , Basic concept for EIA and IEE process in hydropower projects, Assessment of impacts of hydropower development to resettlement, watershed erosion, silt runoff, water use conflicts, downstream flow variations, impact on air, noise and water quality, impacts of ground water quality, eutrophication, reservoir shoreline erosion, encroachment into precious ecology, impact on wildlife, fisheries, neighborhood people's health, income, social relations; impact due to possible change in livelihood; gender issues, Effects to project components and different phases of project construction (construction, operation, Environmental mitigation, monitoring and management plans for Storage, Run-of-River, Peaking run-of-river projects at different phases, Auditing of hydropower projects, process and significance of environmental auditing, Environmental enhancement measures like rural electrification, watershed management, reservoir fishery etc.

9. **Environmental Impact Management of Transmission Line Projects**

Basic process for EIA and IEE of Transmission line projects, Assessment of impact related to transmission like resettlement, encroachment into precious ecology, encroachment on historical/cultural values, land value changes, fragmentation, aesthetics, electrical shock hazards, health and safety and gender issues, impact on neighborhood people's health, income, social relations; impact due to possible change in livelihood etc., Environmental mitigation, monitoring and management plans for the identified impacts, Effects and

mitigation to project components and different phases of project construction (construction, operation), Mitigation and monitoring and auditing of transmission line projects, Process and significance of environmental auditing

10. Environmental Impact Management of Thermal Power Plants

Basic process for EIA and IEE of Thermal Power Plants, assessment of possible impacts of Thermal Power Plants development to resettlement, Air quality, water quality, noise, encroachment into precious ecology, waste emission problems, hazardous spills, occupational health and safety, nuisance from fuel spills, impacts on neighborhood people's health, income, social relations, impact due to possible change in livelihood etc., Effect and mitigation related to project components and different phases of project construction (construction, operation); Environmental mitigation, monitoring and management plans, Knowledge of pollution control equipment, mitigation, monitoring and auditing

11. Ethics in Environmental Impact Analysis (EIA) Process

Practical ethics, Libertarianism, Discourse on communicative ethics, Procedural fairness or equity, Critical ethics, Communitarian ethics, Egalitarian ethics, Distributional or outcome equity or fairness, Research ethics, Professional ethics, Environmental ethics, Feminist ethics, Sustainability ethics, Ethical pluralism.