

**बुढीगण्डकी जलविद्युत कम्पनी लिमिटेड**  
**प्राविधिक सेवा, विविध समूह, वातावरण उपसमूह, सातौं तहका करार सेवाका पदहरुको**  
**खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम**

यस पाठ्यक्रमलाई दुई चरणमा विभाजन गरीएको छः

**प्रथम चरण:-** लिखित परीक्षा ( Written Examination)

पूर्णाङ्क:- १००

**द्वितीय चरण:-** क) अन्तर्वार्ता ( Interview)

पूर्णाङ्क:- २०

**प्रथम चरण: लिखित परीक्षा ( Written Examination)**

| पत्र  | विषय            | पूर्णाङ्क                                  | उतीर्णाङ्क | परीक्षा प्रणाली     |                           | प्रश्नसंख्या<br>X अङ्क | समय     |
|-------|-----------------|--|------------|---------------------|---------------------------|------------------------|---------|
| प्रथम | General Subject | Part I:<br>General Awareness Test (२०)     | ४०         | वस्तुगत (Objective) | बहुवैकल्पिक प्रश्न (MCQS) | १०X २                  | १ घण्टा |
|       |                 | Part II:<br>General Technical Subject (८०) |            |                     |                           | ४०X २                  |         |

**द्वितीय चरण: अन्तर्वार्ता ( Interview)**

पूर्णाङ्क:- २०

| पत्र/विषय                | पूर्णाङ्क | उतीर्णाङ्क | परीक्षा प्रणाली          | समय      |
|--------------------------|-----------|------------|--------------------------|----------|
| अन्तर्वार्ता (Interview) | २०        |            | अन्तर्वार्ता (Interview) | ३० मिनेट |

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
- यस पाठ्यक्रम अन्तर्गतका पत्र/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 ।
- प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरुलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।

**प्रथम खण्ड (Part I)**

**सामान्य ज्ञान [Part I: General Knowledge] [१०\*२=२० अंक]**

**1. सामान्य ज्ञान:**

- नेपालको भूगोल, नेपालमा पाइने हावापानीको किसिम र विशेषता, नदीनाला, तालतलैया, पर्वत श्रृंखला, हिमनदी, प्राकृतिक स्रोत साधन, विद्युत सम्बन्धी जानकारी

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1.2 नेपालमा विद्युत विकास, ऊर्जाका स्रोत र सम्भावना, विद्युत व्यापार

1.3 नेपालको संघीय, प्रादेशिक र स्थानीय संरचना तथा शासन प्रणाली सम्बन्धी जानकारी

**1.4 Policy, Act and Rules:**

- Electricity Regulatory Commission Act, 2074
- Electricity Act, 2049 and Electricity Regulation, 2050
- Public Procurement Act, 2063 and Regulations, 2064
- Memorandum of Association , Article of Association of Budhigandaki Jalbidhyut Company Limited
- Good Governance (Management and Operation) Act, 2064
- Land Acquisition Act, 2034
- Environment Protection Act, 2076 and Environment Protection Regulation, 2077

**1.5 Electricity Development in Nepal**

- History of power development in Nepal; Electricity supply demand supply
- Hydropower potential of Nepal and prospects and challenges for its development
- Budhigandaki Jalbidhyut Company Ltd: objective, functions, corporate structure, achievement and challenges
- Reliable and Equality Electricity Services in Administration Development (Nepal: Prospects and Challenges)

**दोस्रो खण्ड (Part II) General Technical Subject [40\*2=80]**

**1. Basic Concept of Environmental Science: (4 x2=8)**

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: (4 x2=8)**

Water resources (surface and underground) and their utilization; Forest resources, soil resources, Wildlife resources, Wind resources, Mineral resources: metallic and nonmetallic, 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

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**3. Climate Change: (4 x2=8)**

Climate change and variability, Paleoclimatology, Climate during post glacial period, Causes of climate change: natural and anthropogenic, Greenhouse effects, Historical emission of CO<sub>2</sub>, 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: (5 x2=10)**

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: (5 x2=10)**

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 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: (4 x2=8)**

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, Disaster Risk Management and Practices.

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**7. Fundamental Approach for Environmental Impact Analysis (EIA) (4 x2=8)**

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: (5 x2=10)**

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 Project(5 x2=10)**

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