नेपाल विद्युत् प्राधिकरण

प्राविधिक सेवा, विविध समूह, जियोलजि उपसमूह, तह–९ उपप्रवन्धक पदको

प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

१. लिखित परीक्षाको विषय, पूर्णांङ्क, परीक्षा प्रणाली, प्रश्नसंख्या, अंकभार र समय निम्नानुसार हुनेछ ।

पत्र	विषय	पूर्णांङ्क	परीक्षा प्रणाली		प्रश्न संख्या	प्रति प्रश्न अंकभार	समय
प्रथमपत्र	सेवा सम्वन्धी	६०	विषयगत	छोटो उत्तर	८	५	२ घण्टा
				लामो उत्तर	२	१०	
द्वितीयपत्र	व्यवस्थापकीय ज्ञान	४०	विषयगत	छोटो उत्तर	४	५	१ घण्टा
				समस्या समाधान	१	२०	

२. प्रथमपत्र र द्वितीयपत्रको परीक्षा २ पटक गरेर हुनेछ । प्रथमपत्रको परीक्षा सकिए पछि द्वितीयपत्रको परीक्षा तत्काल हुनेछ ।

३. परीक्षाको माध्यम नेपाली वा अंग्रेजी भाषा हुनेछ ।

प्रथमपत्र : सेवा सम्वन्धी

1. General Geology

Geology of Nepal Himalayas, Geology of major hydroelectric projects of Nepal,
Stratigraphy, Plate tectonics, Seismicity Evaluation, Seismicity of Nepal, Structure of Earth, Geomorphology.

2. Engineering Geology

Engineering geological mapping and its application for different phases of project study. Rock Mass Classification and its method and interpretation related to the major hydraulic structure, analysis of geological data, application of engineering geology in land use, planning, mitigation of geological hazards and environmental protection. Engineering geological parameters required for the design of the hydraulic structures.

3. Structural Geology

Origin and causes of different kinds of structural disturbances such as folds, faults, thrusts, joints, unconformity and other structural discontinuities. The impact of these structural features in the design of hydraulic structure.

4. Mineralogy and Petrology

Different types of rock forming minerals and its importance, important rock forming minerals found in Nepal. Petrographic analysis and classification of rocks: igneous, sedimentary and metamorphic rocks and their mineral compositions

5. Geophysical Study

Importance of geophysical study in hydropower study, different types of geophysical study used in hydropower study.

6. Mass Movements and Rock Slope Engineering

Debris flow, mud flow, rock slide, land slide etc and their impact on project structures. Various types and causes of land slide.

7. Geological and Geotechnical Investigation

Geological investigation at different phases of hydropower study level. Scope and objectives of field investigation works at different stages of hydropower study. Types and methods of geological and geotechnical field investigation. Equipment and resources required for the investigation works, data analysis and interpretation and presentation of field data.

8. Field In-situ Tests

Different types of in-situ tests and its method, interpretation and analysis.

9. Construction Material Survey and Laboratory Tests

Methods and Types of construction materials required for the construction of hydropower structures, Sampling method, different laboratory tests and in-situ tests on collected samples

10. Geotechnical Design

Geotechnical design of underground opening: tunnel, powerhouse, desander and surge tank. Methods and Types of geotechnical design, design of support system, stress analysis, parameters required for the design of underground opening. Rock bolts and its types, Rock dowels, shotcrete

11. Instrumentation

Instrument used for the measurement of changes in deformation and stresses. Types of instrument and theory of measurements: transducers, pressure cells, tiltmeters, dilatometers,extensometers etc, components of various instruments, types and methods of in-situ field measurements such as in-situ stress, convergence measurement, pore pressure measurement etc and accuracy of measurements.

12. Computer Application

Word Processing, Spread Sheets, database, management information system, internet, famililiarity with basic development in computer hardware and software, computer softwares related to the geology and geotechnical fields.

13. Exploration Planing

Planing of different types of geological exploration works required for the study of hydropower projects..

द्वितीयपत्र : व्यवस्थापकीयज्ञान

A. 1. POWER SECTOR DEVELOPMENT AND INSTITUTIONS INVOLVED:

History of power development in Nepal, Energy demand supply trends, Challenges and prospects of hydropower development, Importance of power exchange agreement with India, Cross border/regional power trade, Scope of power exchange with other countries, Coordination between stakeholders in power sector, Scope for export oriented development of power sector, NEA's mission and objectives, Basic trends in NEA development, Policies and programs of NEA, Financing of NEA, Indicators of NEA financial performance, NEA rules and regulations on employment, procurement and promotion, Inventory control, Impediments for growth and possible reform measures, Role of Government institutions involved in power sector development, Role and importance of IPPs, Major projects under implementation and planning.

2. LEGAL PROVISIONS FOR POWER SECTOR DEVELOPMENT:

Hydropower Development policy, 2058, Water Resources Act, 2049, Water Resources Regulations, 2050, Electricity Act, 2049, Electricity Regulation, 2050, Nepal Electricity Authority Act, 2041, Environment Protection Act, 2053, Environment Protection Regulation, 2054, Electricity Pilferage Control Act, 2058, Electricity Pilferage control regulation, 2059, Electricity Tariff Fixation Regulation 1993, Land Acquision Act.2034, Industrial Policy 2049,

3. ENGINEERING ECONOMICS:

Cash flow analysis, Project evaluation indicators, Payback period, Criteria for capital investment decision, Risk analysis, Taxation system in Nepal, Energy tariff and regulatory issues.

4. PROJECT MANAGEMENT:

Project Planning and Scheduling: Network models, CPM/PERT, Manpower leveling, Material scheduling, Project preparation for implementation and justification of the project.

Project monitoring and control: System of control, Project control cycle, Feedback control systems, Cash control.

Capital Planning and Budgeting: Capital planning procedures, Preparation of operating budgets, fixed and flexible budget, budgetary control.

5. ORGANIZATION AND MANAGEMENT:

Concept of Management, Internal Organization, Motivation, Leadership, control, coordination and team work, Decision making, Corporate planning and strategic management, Management Information System , Job description, Job analysis, Performance appraisal, Auditing and inventory control, Personnel Management, Familiarization with procurement guidelines and standards of World Bank, ADB, Preparation of Contract documents, specifications, condition of contract and other contractual procedures.

6. सेवासँग सम्बन्धी निर्देशिका (Manuals) हरु :

Safty Guidelines/standards for Electricity Generation,Transmission and Distribution of Hydropower Projects, Manual for preparing Environmental Management Plan (EPM) for Hydropower Projects, National Environmental Impact assessment Guidelines, 1993.

B. समस्या समाधान :

व्यवस्थापकीय कार्यसंग सम्वन्धित कुनै एउटा समस्या दिईनेछ । प्रचलित ऐन नियमको परिधि र अवस्था समेतलाई विचार गरी दिइएको समस्याको निम्न आधारमा उपयुक्त समाधान र सुझाव प्रस्तुतगर्नु पर्नेछ –

(१) समस्याका खास खास कारणहरु दर्शाउने ।

(२) समस्या समाधानका लागि सुझावहरु प्रस्तुत गर्ने ।

(३) प्रस्तुत सुझावहरु कार्यान्वयन गर्दा त्यसवाट पर्न सक्ने सकारात्मक प्रभावहरु उल्लेख गर्ने ।

द्रष्टव्य: पाठ्यक्रममा राखिएका संविधान, नीति, ऐन, नियम र विनियमहरु परीक्षा हुनु भन्दा ३ महिना अगाडी सम्म संशोधन वा खारेज भई त्यसको सट्टा हाल प्रचलनमा रहेकालाई सोही अनुरुप पाठ्यक्रममा समावेश भएको मानिने छ ।

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