

नेपाल विद्युत प्राधिकरण

प्रशासन सेवा, विविध समूह, अर्थशास्त्र उप-समूह, तह-७, अर्थशास्त्री पदको
खुला प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम
द्वितीय पत्र: सेवा सम्बन्धी ज्ञान (१०० पुर्णाङ्क)

Group A

Energy Economics of Nepal - (5*10=50 Marks)

1. Concept of Energy and Energy in Nepal

- Concept of Energy
- Renewable and Non-renewable Energy
- Major Sources of Energy in Nepal
- Access to Energy in Nepal
- Equity Issue in Energy Access
- Energy Transition Effort in Nepal
- Alternative Energy Promotion in Nepal
- Sustainable Energy for All in Nepal
 - National Rural and Renewable Energy Program (NRREP)
 - Nepal Renewable Energy Program (NREP)
 - Green and Inclusive Energy (GIE) Program
 - Renewable Energy for Rural Livelihood (RERL) Program
 - Renewable Energy for Rural Areas (RERA) Program

2. Demand for Energy

- Energy Data and Accounts
- Demand for Energy
 - Nature of Energy Demand
 - Elasticity of Energy Demand
 - Determinants of Energy Demand
- Energy Demand and Forecasting
 - Energy Demand Analysis
 - Energy Forecasting Techniques
- Energy and Electricity Demand Forecasting Practices in Nepal

3. Energy Supply

- Characteristics of Energy Project
- Uncertainty and Risk in Energy Project
- Determinants of Energy Supply
- Cost of Energy Supply: Short-run and Long-run Cost
- Components of Energy Supply Cost
- Energy Cost Estimation Practices in Nepal

3.1 Economic Analysis

- Concept of Economic Analysis
- Objectives of Economic Analysis
- Tools of Economic Analysis
- Types and Methods of Economic Analysis
 - Cost-Benefit Analysis

- Cost Effectiveness Analysis
- Economic Analysis of a Power Project

3.2 *Financial Analysis*

- Concept of Financial Analysis
- Objectives of Financial Analysis
- Methods of Financial Analysis
- Tools of Financial Analysis
 - Financial Rates and Ratios
- Financial Analysis of a Power Project
- Financial Analysis of a Business Corporate

3.3 *Physical and Social Environment Concerns in Power Project Development*

- Initial Environment Examination (IEE)
 - Concept of IEE
 - Need for IEE
 - Methods and Procedures of IEE
 - Implications of IEE in Power Project Decision
- Environment Impact Assessment (EIA)
 - Concept of EIA
 - Need for EIA
 - Methods and Procedures of EIA
 - Implications of EIA in Power Project Decision
- Climate Change Concerns
 - Climate Change and Global Warming
 - Causes and Consequences of Climate Change
 - Climate Risk in Hydropower Project
- Rehabilitation and Resettlement of Project Affected Families
 - Need for Rehabilitation and Resettlement of Project Affected Families
 - Identification, Consultation and Engagement of Stakeholders
 - Grievances Addressing
 - Acquisition of Land and other Property
 - Valuation and Compensation
 - Livelihood Restoration and Rehabilitation
 - Implementation, Monitoring and Evaluation

4. **Energy Demand and Supply in Nepal**

- Energy Demand
- Determinants of Energy Demand
- Electricity Demand
- Electricity Generation
 - From Public Sector
 - From Private Sector
- Electricity Supply and Demand Gap
- Factors Responsible for Delay in Power Generation in Nepal
 - Institutional Factors
 - Promotor's Credibility and Reputation

- Contractor's Role
- Local Hurdles
- Others
- Economic Consequences of Delay in Power Generation
- Power Loss and Leakages
 - Technical Loss and Non-technical loss (hooking, theft)
 - Implications of Power Loss and Leakages
- Energy and Electricity Policy of Nepal
- Grid Access for All in Nepal
- Universal Access to Electricity in Nepal

5. Markets for Energy

- Concept and Nature of Market
- Competitive, Monopolistic, Oligopoly, Monopoly and Monopsony Markets
- Features of Energy Market
- Pricing Model in Energy Sector
- Peak and Off-Peak Pricing
- Taxes and Subsidies
- Market Failures in Energy Sector
 - Monopoly
 - Rent
 - Externality
- Electricity Market Structure in Nepal
 - Power Generation, Transmission and Distribution Market
 - Power Purchase and Selling Market
- Market Analysis
 - Components of Market Analysis
 - Methods of Market Analysis
 - Market Analysis and Business Plan
 - Electricity Market Analysis Practices in Nepal
- Energy Banking
 - Prospects and Problems of Energy Banking.
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6. Energy Consumption

- Relationship between Energy Consumption and Economic Growth
- Energy Consumption Estimation Method
- Energy Consumption in Nepal
- Differential in Electricity Consumption in Nepal
 - Regional Differentials
 - Rural-Urban Differentials
 - Sectoral Differentials (Residential/Household, Industrial, Commercial, Transportation and others)
- Electricity Consumer's Rights in Nepal

7. Energy Planning

- Concept and Importance of Energy Planning
- Objectives of Energy Planning

- Components of Energy Planning
- Process of Energy Planning
- Energy Planning Practices in Nepal

8. Energy Efficiency

- Concept of Energy Efficiency
- Economic and Social Benefits of Energy Efficiency
- Energy Efficiency Strategy of Nepal
- Energy Efficiency Program in Nepal

Group B

Economics of Power Generation and Trade in Nepal- (5*10=50 Marks)

Electricity Tariff in Nepal

- Tariff Fixation Practices in Nepal
- Tariff Differentials
- Tariff Fixation Authority and Regulations of Nepal
- Situation of Tariff Payment and Dues
- Due Realization Practices in Nepal

9. Power Purchase Agreement (PPA)

- Concept and Importance of PPA
- Need for PPA
- Forms and Types of PPA
- Guiding Principles of PPA
- Components of PPA
- PPA Pricing Corridor
- PPA Regulations of Nepal
- PPA Practice in Nepal
 - PPA for Hydropower Projects (ROR, PROR, Reservoir and Storage Projects)
 - PPA for Solar and Wind Projects

10. Cross Border Electricity Trade (CBET)

- Concept and Importance of CBET
- Economic Benefits of CBET
- Need for Regional Cooperation in Power Sector
- CBET and Hydropower Development
- Current Situation of Energy Integration and CBET in South Asia
- Attempts to Develop CBET in South Asia
 - Policy and Regulations
 - Investment
 - Development of Grid for Power Exchange
- Current Situation of Nepal-India and Nepal-Bangladesh Electricity Trade
- Prospects and Problems of Nepal-India and Nepal-Bangladesh Electricity Trade

11. Community Rural Electrification Program (CREP) in Nepal

- Significance of CREP
- Status of Rural Electrification
- Achievements and Challenges

12. Hydropower Development Endeavour in Nepal

- Hydropower Potential
- Hydropower Development Policy (Hydropower Development Policy, 2058; Periodic National Development Plans)
- Institutional Arrangement
 - Role and Functions of Water and Energy Commission (WEC), Department of Electricity Development (DoED), Nepal Electricity Authority (NEA)
- Rules and Regulations
 - Salient Features of Electricity Act, 2049, Land Acquisition Act, 2034, Public Procurement Act and Regulations
- Private Sector's Involvement
 - Contribution of Independent Power Producers (IPPs) in Power Generation
 - Challenges of IPPs in Nepal
- International Support
 - Bilateral and Multi-lateral Agreement
 - Various Model of Investment for Energy Development
 - Need and Assessment of Grant, Soft Loan and Loan for Power Sector Development
 - Pre-requisite, Conditions and Obligations of Borrowing

13. Economic Policy and Power Sector Development

- Meaning and Goal of Economic Policy
- Economic Liberalization in Nepal
- Economic Liberalization and Power Sector Development in Nepal

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