

द्वितीय पत्र : सेवा सम्बन्धी प्राविधिक विषय

अङ्क :- १००

- 1. Background of the hydro sector**
 - 1.1 Development of hydropower
 - 1.2 Future prospects of development
 - 1.3 Projects for domestic consumption
 - 1.4 Projects for export
 - 1.5 Implications on economic prosperity of the country
- 2. Planning Concepts**
 - 2.1 Time-wise planning
 - 2.2 Basin-wise planning
 - 2.3 Integrated planning
 - 2.4 Multipurpose Projects
- 3. Project Development**
 - 3.1 Project formulation in the national and export context
 - 3.2 Investigation and different level of studies
 - 3.3 Integration with national grid system
 - 3.4 Social/ Environmental/ Economic/ Financial viability
- 4. Implementation of hydro-projects**
 - 4.1 Domestic and export oriented projects
 - 4.2 Financing modalities for the development of hydro-power projects through public/private sectors
- 5. Management methods and financial indicators**
 - 5.1 Risk management
 - 5.2 Project financing and financial indicators
 - 5.3 Legal arrangements (Project agreements, power purchase agreement, insurances etc)
- 6. Impacts of hydro projects on socio-environmental aspects**
 - 6.1 Identification and evaluation
 - 6.2 Mitigative measures
 - 6.3 Monitoring and supervision
 - 6.4 Existing guidelines for IEE (Initial Environmental Exams), EIA (Environmental Impact Assessment) and EMP (Environmental Management Plan)
- 7. Quality control**
 - 7.1 Need of quality control
 - 7.2 Monitoring in respect of optimum use and public safety
- 8. Regulation of the market**
 - 8.1 Present Tariff setting mechanisms
 - 8.2 Regulation of domestic and export oriented projects
- 9. Development of trans-boundary Rivers**
 - 9.1 Previous Indo-Nepal treaties
 - 9.2 Riparian rights
 - 9.3 Benefit/ cost sharing

Model Questions

Analytical Review – Each carrying 15 marks

1. Present a general framework for planning a river basin's water resources in an integrated manner. Also enlist the most important considerations that need to be taken into account in such a planning exercise.
2. Lack of a proper transmission network has impeded Nepal's hydro development. What measures would remove this impediment? Also comment on the feasibility of a SAARC grid.
3. Define project financing. What are the common project risks perceived by a hydropower developer? How does a lender secure his/ her investment in a hydro project?
4. Enlist the common power market models. What are the requirements for a competitive power market? What should be the objectives of power sector reform and regulation in Nepal?

Analytical and Problem Solving - Each carrying 20 marks

1. What are the problems in mobilizing equity and debt financing for hydropower projects in Nepal? Suggest a model for creating a power development fund and raising public investments for the purpose.
2. What is the way forward for cooperation with India on the development of hydropower and multipurpose projects? Present a possible strategic plan.