

लोकसेवा आयोग  
नेपाल इन्जिनियरिङ्ग सेवा, सिभिल समुह, हाईवे उपसमुह, राजपत्रांकित द्वितीय श्रेणी  
(खुला प्रतियोगिता र आन्तरिक प्रतियोगिता) को लिखित परिक्षाको पाठ्यक्रम

द्वितीय पत्र : उपसमूह सम्बन्धी

## **1. Introduction**

- 1.1 National Strategic Road Network.
- 1.2 Classification of Roads.
- 1.3 Concept and Significance of Highway Planning.
- 1.4 Criteria for carrying out Feasibility study for Highway Projects.
- 1.5 Social and environmental consequences of Highways and their mitigation measures.
- 1.6 Highway management Information systems.
- 1.7 Application of computer model in Highway Management.

## **2. Highway Design and Geometries**

- 2.1 Road geometrics and general considerations.
- 2.2 Design Parameters and criteria of selections.
- 2.3 Highway structures and design concepts.

## **3. Highway Drainage and Drainage Structures**

- 3.1 Fundamental concept of Highway and road side drainages.
- 3.2 Prevention of erosion in road corridor.
- 3.3 Bio-Engineering applications.

## **4. Traffic Characteristics and Traffic Controls**

- 4.1 Traffic threshold for road up gradation.
- 4.2 Traffic control and Road Safety.
- 4.3 Maintenance of traffic control devices and safety works.
- 4.4 Public awareness in road safety.
- 4.5 Prevention of road accidents.
- 4.6 Prevention and Control of traffic pollution

## **5. Construction of Highways**

- 5.1 Classification of Roads.
- 5.2 Methods and construction technology.
- 5.3 Types of surfacing and its construction.
- 5.4 Contract Management.
- 5.5 Environmental and social Impact assessment in road sector and its mitigation.
- 5.6 Quality control and assurances.
- 5.7 Monitoring and Evaluation at each level of project implementation.
- 5.8 Labor Intensive method of roads construction.

## **6. Highway Maintenance and Rehabilitation**

- 6.1 Maintenance management system.
- 6.2 Importance and challenge of the highway maintenance.
- 6.3 Issues on water management in road maintenance works.

## **7. Highway Bridges and Tunnels**

- 7.1 Location of bridge site and types of bridges in Nepal.
- 7.2 Construction Technology adopted in bridges and tunnels.
- 7.3 Hydraulic and seismic analysis for bridge and tunnel construction.
- 7.4 Drainage, lighting and ventilation requirement in Tunnel.
- 7.5 River banks and river training works.
- 7.6 Maintenance and rehabilitation of bridges and tunnels.
- 7.7 Structural analysis and design of Highway structures including Bridges.
- 7.8 Cost effective structures for Highway Design.

## **8. Economics, Finance and Administrations**

- 8.1 Transport Economics.
- 8.2 National Economy and Road sector development.
- 8.3 Resource Mobilization in transport sector.
- 8.4 Concept of three year rolling plan.
- 8.5 The road management and finance fund reform implementation committee and its functions.
- 8.6 The concept of Build Operate and Transfer (BOT).
- 8.7 Institutional strengthening.
- 8.8 External Financing.
- 8.9 Concept of Value Engineering.

## **9. Convention and Implementation**

- 9.1 Knowledge on Global and national policies and conventions.
- 9.2 Implementation of Regional and sub-regional charters