

# Nepal Telecom

## Syllabus for Internal Competition for Deputy Manager Telecom, Level 9 (Tech.)

Full Mark: 100

Pass Mark: 40

Time: 3 hours

### Section A ( Technical)

S.N	Types of Question	No. of Questions	Weightage	Total Marks
1	Long Answer Questions	2	10	20
2	Short Answer Questions	5	6	30
	Total			50

### Section B ( Management)

S.N	Types of Questions	No. of Questions	Weightage	Total Marks
1	Long Answer Questions	2	10	20
2	Short Answer Questions	5	6	30
	Total			50

### Section A Technical

**Marks 50**

#### 1. **Telecom and Related Technologies:** **Weightage (5%-15%)**

Global Trends in telecommunication developments ( NGN, Physical & Virtual Networks ) and Technological obsolescence, Convergence of services and technologies, Circuit Switching versus Packet Switching, Comparative Advantages.

Broadband systems, CDMA Wireless Systems, GSM.

VOIP and call bypass technologies, Optical Fiber networks, Copper Optics, Satellite communication systems, Microwave Systems.

#### 2. **Telecommunication Networks, Network Structures and Dimensioning:** **Weightage (5%-15%)**

Switching systems: Hierarchies, routing, Hosts and Remotes, Mobile switches, Interfaces, cross connects, ATM, IP switches

Transmission Systems: - Microwave, optical, satellite, VSATs, SDH, SONET

Access systems: wire line and wireless: GSM, PCS (personal communication systems), CDMA, 3 G, Number Portability,

Telecom Networks: Switch/routers Network, Transmission networks, Broadband Network, Intelligent Networks, Cellular Networks, Network Topologies: Major (star, mesh, overlay etc), Network Synchronization, Network clocks and their stability

LAN, WAN, MAN, Intranet and Internet, Corporate Networks, WiFi, WiMax Tele-traffic Engineering basics:-Traffic, traffic Units, routing, resource allocations basics, Grade of service.

**3. Telecom Services: Weightage (5%-15%)**

Universal Service Obligation (USO) and Universal Access Obligation (UAO), Millennium Development Goals in Telecom Sector: Service Penetrations, Universal Access, Digital Divide and its measures, Figures for SAARC Countries.

Service demand and supply situation in Nepal and in south Asian regions. Services forecasting methods: statistical, econometric models, Geographical supply disparities and ways to eliminate them.

Tariff and Billing, Comparative costs of Telecom Services in Nepal vis a vis countries in SAARC Countries.

Quality of Services (QoS), Key Indicators for service quality from consumer's perspective, Customer care, Consumer protection.

Services and their quality benchmarking of NT in SAARC countries.

**4. Operation and Maintenance: Weightage (5%-10%)**

Network availability, Network Performance Indicators, Development of Efficiency Indicators for Operators, Divisions/Departments and Section/offices, Safety and Maintenance of Telecom Networks, Fault analysis, typical fault rates of network components & Power equipments, Spares dimensioning basis & inventory control.

Management Information System (MIS): Objectives, Key indicators for Operation & Maintenance.

**5. Power Supply System: Weightage (5%-10%)**

Basic power supply system in telecommunication, Basic rectifier principle, Types of rectifiers, Basic Generator principles, Solar Power Systems: solar modules, charge controllers, Switch mode regulators, Battery Technologies: Lead Acid, NiCad, Li-ion Maintenance Free Batteries, Battery Charge Discharge cycles, battery capacities. Power

Systems and their dimensioning, Environment Control systems: air-conditioners, humidifiers/dehumidifiers and their dimensioning to control operation and/or life of the network components.

**6. Telecom Development Organizations and Regulators: Weightage (3%-7%)**

**International Agencies:** ITU, APT, WTO etc.

**Telecom Regulation:** Regulatory objectives, Sector Reform Initiatives in Nepal, Interconnections, Spectrum management and pricing practices,

**National Regulator:** Nepal Telecom Authority (NTA), its mandate, organization and functioning, its role in sector development.

**Major National Telecom Operators:** Their services and market shares, comparative strengths and weaknesses, major areas of agreements and disputes with NT. NT's GSM roaming arrangements (in/out bound): countries and operators, SMS Partners.

**Section B (Management)**

**Marks 50**

**7. General Management**

**Weightage (10%-20%)**

Roles and responsibilities of Senior Manager, Management of time, Problem solving and decision making, Motivation of staff, Communication skills, Interpersonal relation, Management of staff performance, Handling complains and grievances, Appraising performance, Disciplining staff, Management information system, Planning and control systems, Delegation of authority, Productivity management, Quality management, TQM, Change management.

**8. Project Management**

**Weightage (10%-20%)**

Concept of project planning and management and processes, Recent project planning approaches, Project cycle, Linkages between plans, program and projects, Project feasibility study – demand/need forecasting and analysis, technical analysis and economic analysis, environmental analysis, Project planning matrix- logical framework, project appraisal and screening, Project risk factors and mitigation, Contract negotiation, Project implementation plan (PERT, CPM, Network diagram, Gantt Chart), Basics of procurement of goods, services and works, Project proposal & reporting.

**9. Marketing Management**

**Weightage (5%-10%)**

Marketing strategies- product/service, pricing & promotion; Customer relation management –concept, roles and functions; Marketing management issues and challenges of NT.

## 10. Financial Management

**Weightage (5%-10%)**

Financial planning/budgeting, Working capital management, Inventory control management, Material management, Financial audit, Performance audit.

## 11. Miscellaneous

**Weightage (5%-10%)**

Company Act, Rules and Regulations of NT', Current organization and management issues and challenges facing NT.

द्रष्टव्य :

१. प्रश्नहरू अंग्रेजी तथा नेपाली दूवै वा कूनै एक भाषामा मात्र पनि सोध्न सकिनेछ ।
२. प्रश्नहरू सैद्धान्तिक, ब्यवहारिक र विश्लेषणात्मक किसिमबाट सोधिनेछन् ।
३. परीक्षार्थीहरूले अंग्रेजी वा नेपाली मध्ये कूनै एक वा दूवै भाषामा उत्तर दिन सक्नेछन्
४. प्रश्नहरूसंग सम्बन्धित ऐन, नीति, नियम तथा प्रचलित नेपाल कानूनहरू (नेपाल दुरसञ्चार कम्पनी लिमिटेडसंग सम्बन्धित समेत) मा परीक्षा मिति भन्दा तीन महिना अघिसम्ममा संशोधन भई कायम रहेका व्यवस्था लागु हुनेछ ।