

# Nepal Telecom

## Syllabus for Internal Competition for Manager Telecom, Level 10 (Tech.)

Full Mark: 100

Pass Mark: 40

Time: 3 hours

### Section A ( Technical)

S.N.	Types of Questions	No. of Questions	Weightage	Total Marks
1	Long Answer Questions	1	10	10
2	Short Answer Questions	5	6	30
	Total			40

### Section B ( Management)

S.N	Types of Questions	No. of Questions	Weightage	Total Marks
1	Problem & Solution; Issues-4 Root cause-4 Alternative solution-4 Decision-4	1	16	16
2	Long Answer Questions	2	12	24
3	Short Answer Questions	4	5	20
	Total			60

### Section A Technical

Marks 40

#### 1 Telecom Technologies

Global Trends in telecommunication developments and Technological obsolescence, Convergence of services and technologies, Circuit Switching versus Packet Switching, Comparative Advantages. Broadband systems, IMT-2000, UMTS, CDMA Wireless Systems, GSM, Personal Communication Systems (PCS).

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

#### 2. Telecommunication Networks:

##### Network Components:

Types, Switch/routers, Backbone links and Gateways, Broadband access Networks, Intelligent Networks, Next Generation Networks (NGN), 3G, and 4G

Access Networks, Physical and Virtual Networks, Number Portability, Cellular Networks

LAN, WAN, MAN, Intranet and Internet, Corporate Networks, WiFi, WiMax  
Network Topologies: Major (star, mesh, overlay etc), Network Synchronization

**Tele-traffic Engineering basics:**

Traffic, traffic units, routing , grade of service.

Loss Systems, Delay systems, queuing systems and applicable tools to determine resources,

**Major Suppliers for Network Components, Systems and Services to NT:**

Major technology suppliers to Nepal Telecom

Switching, Transmission and Access technologies, Power systems, Billing software  
Computers hardware and software.

Major areas of outsourcing of works and services by NT (construction, transportation, space, training and HRD etc).

**3. Telecom Services**

Modern Trends, Type of services, Universal Service Obligation (USO) and Universal Access Obligation (UAO), Millennium Development Goals in Telecom Sector: Service Penetrations, Universal Access, Digital Divide and its measure: Digital Access Index (DAI) figures for top ten countries and major Asia Pacific Countries, Access Deficits and international practices to address them.

Service demand and supply situation in Nepal and in south Asian and south-east 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 Asia Pacific Region

Quality of Services (QoS), Key Indicators for service quality from consumer's perspective, Customer Care, Consumer Protection: legal aspects and consumer interest forums.

Services and their quality benchmarking of NT in the Asia Pacific Region.

**4. Operation Management**

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, Spares dimensioning basis, Inventory Management.

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.

Management Information System (MIS): Objectives, Key indicators

## 5. Telecom Development Organizations and Regulators

**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 capabilities in sector development.

**Other National Telecom Operators:** Their services and market shares, comparative strengths and weaknesses, major areas of agreements and issues with NT.

Major International Operators with whom NT has working relationships, Success stories of Operators. NT's international partners, GSM roaming arrangements (in/out bound): countries. sms partners.

### Section B (Management)

Marks 60

## 6. General Management:

Roles and responsibilities of Senior Manager, Management of time, Problem solving and decision making, Leadership, Motivation of staff, Communication skills, Interpersonal relation, Conflict management, Negotiation skills, Management of staff performance, Staff development techniques – Coaching / Counseling/ Mentoring, Handling complains and grievances, Appraising performance, Disciplining staff, Unionism and labor relation management, Management information system, Planning and control systems, Delegation of authority, Productivity management, Quality management, TQM, Change management, Corporate governance, Strategic management.

## 7. Project Management:

Concept of project planning and management and processes, Recent project planning approaches, Project cycle, Linkages between Plans/ Programs and projects, Project feasibility study – demand/need forecasting and analysis, technical analysis, financial analysis (NPV, ROI, IRR), economic analysis, social analysis, environmental analysis, Project planning matrix- logical framework, project appraisal and screening, Risk and uncertainty analysis and management, Project negotiation, Project organization, Project implementation plan (PERT, CPM, Network diagram, Gantt Chart), Role and responsibilities of a project manager, Procurement and contract management – goods, services and works, Project monitoring & evaluation techniques and Processes monitoring indicators, Project operation & maintenance, Project proposal preparation.

## 8. Marketing Management

Role of marketing in service industries, marketing strategies – product/service strategies, pricing strategies, place strategies, promotion strategies. Demand /supply forecasting,

market survey, pricing decisions, promotion decisions, market leader, market competition, Marketing processes and strategies of NT, Marketing management issues and challenges of NT

**9. Financial Management:**

Financial management processes, financial planning/budgeting, Working capital management, Fund flow analysis, Investment decisions, Inventory control management, material management, financial audit, Performance audit. Financial Ratios.

**10. Miscellaneous:**

Company Act, Rules and Regulations of NT', Current organization and management issues and challenges facing NT, Issues related to Telecommunications Policy.

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 ।