

Nepal Telecom

Syllabus for Internal Competition for Deputy Manager (Telecom Level 8 To 9 Tech)

Full Mark: 100

Pass Mark: 40

Time: 3 hours

Section A (Technical)

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

Section B (Management)

S.No	Heading	Question No.	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: (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: (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: (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: (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: (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.

7. **General Management** (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** (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** (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** (5 % - 10%)
Financial planning/budgeting, Working capital management, Inventory control management, Material management, Financial audit, Performance audit.
11. **Miscellaneous** (5 % - 10%)
Company Act, Rules and Regulations of NT', Current organization and management issues and challenges facing NT.

**नेपाल टेलिकम
नेपाल दूरसंचार कम्पनी लिमिटेड**

अधिकृत स्तर तह ७ (ले.अ.) पदको आन्तरिक तथा लिखित योग्यता परीक्षाको पाठ्यक्रम

पत्र	विषय	पुर्णाङ्क	समय	प्रश्न संख्या
	सेवा सम्बन्धी	१००	३ घण्टा	समूह (क) वाट ३ वटा र समूह (ख) वाट २ वटा

समूह “क” (Group- A)

1. *Financial Accounting*

- Accounting Concepts and Principles
- Accounting Errors and methods of rectification
- Accounting for shares and debentures
- Financial Statements of companies- Preparation and presentation
- Financial Statement analysis and its interpretation

2. *Nepal Accounting Standards*

- Financial Statement Presentation and Disclosure Requirement (NAS 1)
- Net Profit or Loss for the period, Fundamental Errors and Changes in Accounting Policies (NAS 2)
- Cash Flow Statement (NAS 3)
- Inventories (NAS 4)

3. *Auditing*

- Internal Audit and External Audit- Concept and need
- Internal Control and Internal Check
- Audit Program, Audit File and Audit Working Papers
- Techniques of Auditing

4. *Accounting Policy of Nepal Telecom*

5. *Financial Rules and Regulation of Nepal Telecom*

6. *Management and Marketing knowledge*

- Leadership and Motivation
- Team work and Group dynamic
- Marketing Management- Coping with competition

समूह “ख” (Group B)

7. *Nepal Telecom Authority Act and Regulation*

8. *Taxation in Nepal (Income Tax Act 2058 and Value Added Tax 2052)*

- Assessment of Income Tax of Income from Business/Profession and Employment
- Provisions relating to Tax Deduction at Source
- Exemptions, Partially Allowed Adjustment and Tax Credit in VAT

9. *Companies Act 2063*

- Chapter 5- Company's Meeting
- Chapter 21- Miscellaneous (Company Secretary)

10. *Personnel Rules and Regulation of Nepal Telecom*

- Chapter 8 & 10

11. *Anti Corruption Act 2059*

- Chapter 1 & 2

महत्वपूर्ण जानकारीहरू

- क) समुह “क” (Group A) बाट तीनवटा प्रश्नहरू र समुह “ख” (Group B) बाट दुईवटा प्रश्नहरू सोधिनेछन् ।
ख) परीक्षार्थीले सबै प्रश्नहरूको उत्तर दिनु पर्नेछ ।
ग) प्रश्नहरू अंग्रेजी तथा नेपाली दुवै भाषामा सोधिनेछ ।
घ) परीक्षार्थीहरूले अंग्रेजी वा नेपाली मध्ये कूनै एक भाषामा उत्तर दिनुपर्नेछ ।
ङ) प्रश्नसंग सम्बन्धीत ऐन, नीति, नियम तथा कानूनहरूमा (नेपाल दूरसंचार कम्पनी लिमिटेडसंग सम्बन्धीत समेत) परीक्षा मितिभन्दा तीन महिना अघिसम्ममा भएका संशोधनहरू पनि लागु हुनेछ ।
ड) प्रश्न तथा अंक विभाजन निम्नअनुसार रहनेछ:

समुह “क” (Group A)

प्रश्न सं. १ (एक प्रश्न).....	-	२० अंक
प्रश्न सं. २ (दुई प्रश्नहरू).....	(क) -	१० अंक
	(ख) -	१० अंक
प्रश्न सं. ३ (चार प्रश्नहरू).....	(क) -	५ अंक
	(ख) -	५ अंक
	(ग) -	५ अंक
	(घ) -	५ अंक

समुह “ख” (Group B)

प्रश्न सं. १ (दुई प्रश्नहरू).....	(क) -	१० अंक
	(ख) -	१० अंक
प्रश्न सं. २ (चार प्रश्नहरू).....	(क) -	५ अंक
	(ख) -	५ अंक
	(ग) -	५ अंक
	(घ) -	५ अंक

Nepal Telecom

Syllabus for Internal Competition from Deputy Manager To Manager (Telecom Level 9 To 10 Tech)

Full Mark: 100

Pass Mark: 40

Time: 3 hours

Section A (Technical)

S.No	Types Of question	Question No.	Weight age	Total Marks
1	Long Answer Questions	1	10	10
2	Short Questions	5	6	30
	Total			40

Section B (Management)

S.No	Heading	Question No.	Weightage	Total Marks
1	Problem & Solution: Issue-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.

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

नेपाल टेलिकम

(नेपाल दूरसञ्चार कम्पनी लिमिटेड)

अधिकृत स्तर तह ९ उप-प्रबन्धक लेखा पदको आन्तरिक प्रतियोगिता र योग्यता परीक्षाको पाठ्यक्रम

विषय	पुर्णाङ्क	समय	प्रश्न संख्या
सेवा सम्बन्धी	१००	३ घण्टा	समूह (क) बाट ३ वटा र समूह (ख) बाट २ वटा गर्नु पर्नेछ ।

सेवा सम्बन्धि

समूह (क)

1. Financial Accounting

- 1.1 Accounting Concepts, Principles and Conventions
- 1.2 Accounting Error, its types and methods of rectification
- 1.3 Accounting for shares and debentures
- 1.4 Financial Statements of Companies- Preparation and presentation
- 1.5 Financial Statements Analysis, Interpretation and Predictive Power
- 1.6 Reserves, Provisions and Owners' Equity
- 1.7 Valuation of Shares, Business and Goodwill

2. Nepal Accounting Standards and Financial Statement Reporting Standards

- 2.1 Nepal Accounting Standards
- 2.2 Application of NAS and IFRS (INTERNATIONAL FINANCIAL REPORTING STANDARDS)

3. Cost and Management Accounting

- 3.1 Concepts, Principles and Scope
- 3.2 Application of Management Accounting in Managerial Decision Making
- 3.3 Capital Structure (Equity + Deb + Loan)
- 3.4 Budgeting and Budgetary Control

4. Auditing

- 4.1 Internal Audit and External Audit
- 4.2 Internal Control and Internal Check
- 4.3 Audit File and Audit Working Notes
- 4.4 Techniques of Auditing
- 4.5 Audit Planning and Programs
- 4.6 Audit and Investigation
- 4.7 Nepal Standards on Auditing and its applicability

5. Management and Marketing Knowledge

- 5.1 Leadership and Motivation
- 5.2 Team Work, Team Building and Group Dynamic
- 5.3 Project Management

समूह (ख)

ऐन नियम तथा कानून

1. Nepal Telecom Authority Act and Regulation
2. Income Tax Act 2058 and Income Tax Regulation 2059
3. Value Added Tax Act 2052 Value Added Tax Regulation 2053
4. Companies Act 2063
 - Chapter 5 - Company's Meeting
 - Chapter 6 - Board of Director
5. Accounting Policy of Nepal Telecom
6. Financial Rules and Regulation of Nepal Telecom
 - Chapter 2,3,4,5, 6,7 & 9
7. Personnel Rules and Regulation of Nepal Telecom
 - Chapter 3, 8 & 10

महत्वपूर्ण जानकारीहरु

- १ समूह (क) बाट तिन वटा प्रश्नहरु र समूह (ख) बाट दुईवटा प्रश्नहरु सोधिनेछन् ।
- २ प्रश्नहरु अंग्रेजी तथा नेपाली दुवै वा कुनै एक भाषामा मात्र पनि सोध्न सकिनेछ ।
- ३ परीक्षार्थीहरुले अंग्रेजी वा नेपाली मध्ये कुनै एक भाषामा उत्तर दिन सक्नेछन् ।
- ४ प्रश्नहरूसंग सम्बन्धित ऐन, नीति, नियम तथा प्रचलित नेपाल कानून (नेपाल दूरसञ्चार कम्पनी लिमिटेडसंग सम्बन्धित समेत) मा परीक्षा मिति भन्दा तीन महिना अघिसम्ममा संशोधन भई कायम रहेका व्यवस्था लागू हुनेछ ।
- ५ परीक्षार्थीले न्यूनतम ४० प्रतिशत अङ्क प्राप्त गर्नु पर्नेछ ।
- ६ प्रश्न तथा अंकभार निम्न अनुसार हुनेछ :

समूह (क)

- | | | |
|----|---------------------------------|--------|
| १. | प्रश्न संख्या (एक प्रश्न) ----- | २० अंक |
| २. | प्रश्न संख्या (दुई प्रश्नहरु) | |
| | (क) ----- | १० अंक |
| | (ख) ----- | १० अंक |

३. प्रश्न संख्या (४ वटा
प्रश्नहरूको उत्तर दिनु पर्नेछ ।
- (क) ----- ५ अंक
(ख) ----- ५ अंक
(ग) ----- ५ अंक
(घ) ----- ५ अंक
- समूह (ख)
१. प्रश्न संख्या (दुई प्रश्नहरू)
- (क) ----- १० अंक
(ख) ----- १० अंक
२. प्रश्न संख्या (४ वटा
प्रश्नहरूको उत्तर दिनु पर्नेछ ।
- (क) ----- ५ अंक
(ख) ----- ५ अंक
(ग) ----- ५ अंक
(घ) ----- ५ अंक

नेपाल टेलिकम
(नेपाल दूरसञ्चार कम्पनी लिमिटेड)

अधिकृत स्तर तह ८ (बरिष्ठ लेखा अधिकृत) पदको आन्तरिक प्रतियोगिता र योग्यता परीक्षाको पाठ्यक्रम

विषय	पुर्णाङ्क	समय	प्रश्न संख्या
सेवा सम्बन्धी	१००	३ घण्टा	समूह (क) बाट ३ वटा र समूह (ख) बाट २ वटा गर्नु पर्नेछ ।

सेवा सम्बन्धि

समूह (क)

1. Financial Accounting

- 1.1 Accounting Concepts, Principles and Conventions
- 1.2 Accounting Error, its types and methods of rectification
- 1.3 Accounting for shares and debentures
- 1.4 Financial Statements of Companies- Preparation and presentation
- 1.5 Financial Statements Analysis, Interpretation and Predictive Power

2. Nepal Accounting Standards and Financial Statement Reporting Standards

- 2.1 Nepal Accounting Standards
- 2.2 Application of NAS and IFRS (INTERNATIONAL FINANCIAL REPORTING STANDARDS)

3. Cost and Management Accounting

- 3.1 Concepts, Principles and Scope
- 3.2 Application of Management Accounting in Managerial Decision Making
- 3.3 C-V-P Analyses

4. Auditing

- 4.1 Internal Audit and External Audit
- 4.2 Internal Control and Internal Check
- 4.3 Audit File and Audit Working Notes
- 4.4 Techniques of Auditing
- 4.5 Audit Planning and Programs
- 4.6 Audit and Investigation
- 4.7 Nepal Standards on Auditing and its applicability

समूह (ख)

ऐन नियम तथा कानून

1. Nepal Telecom Authority Act and Regulation
2. Income Tax Act 2058 and Income Tax Regulation 2059
3. Value Added Tax Act 2052 Value Added Tax Regulation 2053
4. Accounting Policy of Nepal Telecom.
5. Companies Act 2063
 - Chapter 5 Company's Meeting
 - Chapter 6 Board of Director
 - Chapter 21 Miscellaneous (Bonus Share & Company Secretary)
6. Financial Rules and Regulation of Nepal Telecom
 - Chapter 2,3,4,5, 6,7 & 9
7. Personnel Rules and Regulation of Nepal Telecom
 - Chapter 3, 8 & 10
8. Anti Corruption Act 2059
 - Chapter 1, 2 & 5

महत्वपूर्ण जानकारीहरू

- १ समूह (क) बाट तिन वटा प्रश्नहरू र समूह (ख) बाट दुईवटा प्रश्नहरू सोधिनेछन् ।
- २ प्रश्नहरू अंग्रेजी तथा नेपाली दुवै वा कुनै एक भाषामा मात्र पनि सोध्न सकिनेछ ।
- ३ परीक्षार्थीहरूले अंग्रेजी वा नेपाली मध्ये कुनै एक भाषामा उत्तर दिन सक्नेछन् ।
- ४ प्रश्नहरूसंग सम्बन्धित ऐन, नीति, नियम तथा प्रचलित नेपाल कानून (नेपाल दूरसञ्चार कम्पनी लिमिटेडसंग सम्बन्धित समेत) मा परीक्षा मिति भन्दा तीन महिना अघिसम्ममा संशोधन भई कायम रहेका व्यवस्था लागू हुनेछ ।
- ५ परीक्षार्थीले न्यूनतम ४० प्रतिशत अङ्क प्राप्त गर्नु पर्नेछ ।
- ६ प्रश्न तथा अंकभार निम्न अनुसार हुनेछ :

समूह (क)

१. प्रश्न संख्या (एक प्रश्न) ----- २० अंक
२. प्रश्न संख्या (दुई प्रश्नहरू) (क) ----- १० अंक
(ख) ----- १० अंक
३. प्रश्न संख्या (४ वटा) (क) ----- ५ अंक
प्रश्नहरूको उत्तर दिनु पर्नेछ । (ख) ----- ५ अंक
(ग) ----- ५ अंक
(घ) ----- ५ अंक

समूह (ख)

१. प्रश्न संख्या (दुई प्रश्नहरू) (क) ----- १० अंक
(ख) ----- १० अंक
२. प्रश्न संख्या (४ वटा) (क) ----- ५ अंक
प्रश्नहरूको उत्तर दिनु पर्नेछ । (ख) ----- ५ अंक
(ग) ----- ५ अंक
(घ) ----- ५ अंक

नेपाल टेलिकम
(नेपाल दूरसञ्चार कम्पनी लिमिटेड)

अधिकृत स्तर तह ८ (बरिष्ठ प्रशासकीय अधिकृत) पदको आन्तरिक प्रतियोगिता र योग्यता परीक्षाको
पाठ्यक्रम

विषय	पुर्णाङ्क	समय	प्रश्न संख्या
सेवा सम्बन्धी	१००	३ घण्टा	समूह (क) बाट ३ वटा र समूह (ख) बाट २ वटा गर्नु पर्नेछ ।

सेवा सम्बन्धि

समूह (क)

1. Human Resources Management

- 1.1 Concept, Functions and Importance of Human Resources Management in Organizations
- 1.2 Strategic Human Resource Planning in 21st Century
- 1.3 Job Analysis and its Purposes
- 1.4 Personnel Administration
- 1.5 Motivation
- 1.6 Performance Appraisal System- Types and Uses
- 1.7 Rewards Management
- 1.8 Handling Employee Grievances –Conflict Management and Negotiation Skill
- 1.9 Labor Relation and its Process

2. Organization Behavior

- 2.1 Understanding Organization Behaviour
- 2.2 Leadership and its Importance, Types of Leadership
- 2.3 Decision Making and its Types and Models
- 2.4 Effective Communication in Organization
3. Good Governance
4. Participatory Management
5. Public Relation

समूह (ख)

ऐन नियम तथा कानून

1. Nepal Telecom Authority Act and Regulation
2. Companies Act 2063
 - Chapter 5 Company's Meeting
 - Chapter 6 Board of Director
 - Chapter 21 Miscellaneous (Bonus Share & Company Secretary)
3. Financial Rules & Regulation of Nepal Telecom.
 - Chapter 3
4. Personnel Rules and Regulation of Nepal Telecom
 - Chapter 2,6,8,10,11 & 12
5. Anti Corruption Act 2059
 - Chapter 1, 2 & 5
6. Bonus Act (Article 7) and Bonus Rules (Article 8)
7. Labour Law of Nepal
 - Chapter 6
 - Chapter 9 (63)
 - Chapter 10
8. Trade Union Act
Chapter 3 (11,12,13)

महत्वपूर्ण जानकारीहरू

- १ समूह (क) बाट तिन वटा प्रश्नहरू र समूह (ख) बाट दुईवटा प्रश्नहरू सोधिनेछन् ।
- २ प्रश्नहरू अंग्रेजी तथा नेपाली दुवै वा कुनै एक भाषामा मात्र पनि सोध्न सकिनेछ ।
- ३ परीक्षार्थीहरूले अंग्रेजी वा नेपाली मध्ये कुनै एक भाषामा उत्तर दिन सक्नेछन् ।
- ४ प्रश्नहरूसंग सम्बन्धित ऐन, नीति, नियम तथा प्रचलित नेपाल कानून (नेपाल दूरसञ्चार कम्पनी लिमिटेडसंग सम्बन्धित समेत) मा परीक्षा मिति भन्दा तीन महिना अघिसम्ममा संशोधन भई कायम रहेका व्यवस्था लागू हुनेछ ।
- ५ परीक्षार्थीले न्यूनतम ४० प्रतिशत अङ्क प्राप्त गर्नु पर्नेछ ।
- ६ प्रश्न तथा अंकभार निम्न अनुसार हुनेछ :

समूह (क)

१. प्रश्न संख्या (एक प्रश्न) ----- २० अंक
२. प्रश्न संख्या (दुई प्रश्नहरू) (क) ----- १० अंक
(ख) ----- १० अंक
३. प्रश्न संख्या (४ वटा) (क) ----- ५ अंक
प्रश्नहरूको उत्तर दिनु पर्नेछ । (ख) ----- ५ अंक
(ग) ----- ५ अंक
(घ) ----- ५ अंक

समूह (ख)

१. प्रश्न संख्या (दुई प्रश्नहरू) (क) ----- १० अंक
(ख) ----- १० अंक
२. प्रश्न संख्या (४ वटा प्रश्नहरूको उत्तर दिनु पर्नेछ ।) (क) ----- ५ अंक
(ख) ----- ५ अंक
(ग) ----- ५ अंक
(घ) ----- ५ अंक

नेपाल टेलिकम
(नेपाल दूरसञ्चार कम्पनी लिमिटेड)

अधिकृत स्तर तह ढ (बरिष्ठ ब्यापार अधिकृत) पदको आन्तरिक प्रतियोगिता र योग्यता परीक्षाको
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सेवा सम्बन्धि

समूह (क)

1. General Management

- 1.1 Modern Approaches to Management
- 1.2 Managerial Roles and Management Functions
- 1.3 Organizational Planning and Control
- 1.4 Organizational Decision -Making Process
- 1.5 Authority and Responsibility, Delegation Of Authority
 - Performance Appraisal & Rewards Management Including Appraisal System Of Nepal Telecom
 - Staff Supervision - Objectives & Importance Of Information Management , Public Relation

2. Management Information System

- 2.1 Information and Decision Making
- 2.2 Role and Importance of MIS
- 2.3 Management as a Control System
- 2.4 Impact of Information System in the Organization and the Society
- 2.5 MIS a Tool for Management Process

3. MARKETING

- 3.1 Basics of marketing management
- 3.2 Marketing Environment
- 3.3 Dealing with Competition
- 3.4 Customer Satisfaction- value and Retention
- 3.5 Advertising & Promotional Management
- 3.6 Pricing Strategies and Market Research
- 3.7 Types of Telecommunications Service in Nepal.

समूह (ख)

ऐन नियम तथा कानून

1. Nepal Telecom Authority Act
 - Chapter 3,5,6,7,8 &10Nepal Telecom Authority Regulation
 - Chapter 3,4,5,6,7& 8
2. Companies Act 2063
 - Chapter 5 Company's Meeting
 - Chapter 6 Board of Director
 - Chapter 21 Miscellaneous (Bonus Share & Company Secretary)
3. Financial Rules and Regulation of Nepal Telecom
 - Chapter 5, 6 & 9
4. Personnel Rules and Regulation of Nepal Telecom
 - Chapter 2, 8, 10 & 12
5. Anti Corruption Act 2059
 - Chapter 1, 2 & 5
6. Cyber Law and IT Policies of Nepal
7. Commercial Law of Nepal
8. General Knowledge on WTO

महत्वपूर्ण जानकारीहरू

- १ समूह (क) बाट तिन वटा प्रश्नहरू र समूह (ख) बाट दुईवटा प्रश्नहरू सोधिनेछन् ।
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- ६ प्रश्न तथा अंकभार निम्न अनुसार हुनेछ :

समूह (क)

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२. प्रश्न संख्या (दुई प्रश्नहरू) (क) ----- १० अंक
(ख) ----- १० अंक
३. प्रश्न संख्या (४ वटा) (क) ----- ५ अंक
प्रश्नहरूको उत्तर दिनु पर्नेछ । (ख) ----- ५ अंक
(ग) ----- ५ अंक
(घ) ----- ५ अंक

समूह (ख)

१. प्रश्न संख्या (एक प्रश्न) ----- २० अंक
२. प्रश्न संख्या (दुई प्रश्नहरू) (क) ----- १० अंक
(ख) ----- १० अंक
३. प्रश्न संख्या (४ वटा) (क) ----- ५ अंक
प्रश्नहरूको उत्तर दिनु पर्नेछ । (ख) ----- ५ अंक
(ग) ----- ५ अंक
(घ) ----- ५ अंक

Nepal Telecom

Syllabus for Internal Competition Written Examination for Senior Engineer (Telecom Level 7 To Level 8 Tech)

Full Marks: 100
Time: 3 hours

(Common Subject for Telecom Group)

Section A Technical

Marks 60

- 1 **Basic Electrical and Electronics** *(Weightage 5% to 15%)*

Circuit elements, series & parallel circuits, resistance, resistivity, Ohm's laws, Kirchoff's laws, Single phase & three phase circuit, star & delta connections, Measurement of current, voltage, power, energy, insulation resistance, Primary & Secondary cells, Cells in series & parallel, Fundamentals of transformers, Generators and Induction motors, Electrical shock hazards, Earthing and shielding techniques for telecom equipments, Lightning protections.

Diode, Zener diode, LEDs, Transistors, Binary and Hexadecimal Number systems, combinational logics, K-Maps, Flip-Flop, register, counter clock, shift registers, buses, power supplies & voltage regulators, power amplifiers, Oscillator circuits, Half wave rectifier, full wave rectifier, Bridge rectifier, Logic gates: AND, OR, NOT, NAND, NOR.

- 2 **Telecommunications** *(Weightage 15 to 25%)*

Difference between analog and digital communications, Basic communications elements, Signal and noise in communication system, AM, DSB-SC, SSB-SC, PM, FM, Sampling theorem, PCM/ADPCM, Digital Modulation: ASK/PSK/FSK /QPSK /QAM, Phase locked loop.

Telecommunication network, Basic external plant, Components and structure of local telecommunications networks, Aerial and Underground Networks, Different types of Copper cables and Technical Parameters, Network Planning concept and NT standards, Copper Center, Types of faults in outside plant, Optical Fiber Access Network System, Optical transmitters and receivers, splices, connectors & coupling, Fiber Optics Networks.

Transmission media, transformer and hybrid circuit, signal and noise measurements, echo & singing, space/time/frequency/wave length division multiplexing, , PDH/SDH, DSL, line codes, Packet, Message and circuit switching, Functions of switching, electronic switching, TS/ST/TST/STS switching, No 5 and No 7 signaling, Erlang, Busy hour, ISDN, BISDN, ATM.

TCP/IP Protocol, OSI layers, Computer Networks, LAN, WAN concept, Basics of C-programming.

Multiple Access Methods: FDMA, TDMA, CDMA; GSM (Global System for Mobile Communications), DECT (Digital European Cordless Telephony), MARTS (Multi Access Radio Telephony System), VHF, UHF, Satellite communications, Earth stations, VSAT (Very Small Aperture Terminal), UMTS (Universal Mobile Telecommunications System), Next generation network, Voice over IP, IP/PSTN Platform, Intelligent Network.

3 **Information and Communications Technology Basics** *(Weightage 3% to 7%)*

Computer architecture, Microprocessor fundamentals, Microcomputer systems: Bus structure, Memory systems (main, auxiliary, virtual, cache, I/O devices, parallel and serial interfaces, RS-232 standards, variables, constants, data types, arithmetic expression, arrays, Concept of ROM, RAM., MS-office packages, basic concept on internet and e-mail, Computer Peripheral and flow chart

4 **Power Supply System and Battery** *(Weightage: 15 to 25%)*

Different types of batteries used in Nepal Telecom, Charge/Discharge Characteristics, Method of Measuring Specific Gravity, Standard Cell Voltage of different types of Batteries. Difference between Solar Battery and Conventional Batteries, Deep Discharge, Battery Life, Over charge Problem, Internal Resistance of Battery, Chemical Reaction of Batteries in Charge and Discharge condition, Maintenance process of Battery.

Three Phase Power Systems, Generating Plants, Distribution Systems, Stand by Diesel Generator, UPS, Renewable Energy – Solar, Solar charge controllers; Voltage Regulator, Converter, Switching Mode Power Supply, Lightning Arrestor, Voltage regulators: Power supply, Series regulator; UPS, Inverter, Rectifier, AC and DC relays, MCB and MCCB, Block diagram of Power Supply System in Nepal Telecom.

Operational principles of internal combustion engine and its classification, difference between diesel and petrol engine, components of diesel engine, Coolant system requirements, Components of lubricating system, Oil filters, fuel-injection system, Governor, Fuel Pump, Different types of diesel generators used in Nepal Telecom. Operation and Maintenance and control of diesel generators, Protection Provided for Mains Supply and Generator Supply, Normal and Interrupted Operational Sequences, Different types of Control Panel used in NT and their Various Components.

Refrigeration Systems (Carnot Cycles, Refrigerator & Heat Pump, Vapour Compression Cycle etc.), Dalton's Law of partial pressures, relative humidity, humidity ratio and dew point temperature; refrigerants and their classification and properties. Difference between Air conditioning and Refrigeration system, Components of Air-condition systems, Different types of Air condition systems used in Nepal Telecom.

5. **Maintenance and Safety Engineering**

(Weightage: 3 to 7%)

Types of maintenance: Daily, Regular, Preventive, Corrective, Emergency; Major maintenance done in Power equipments used in Nepal Telecom. Electric shock hazards, Earthing and types of earthing, Shielding techniques for electrical equipment, Electrical induction into communications lines, Surge protection, Industrial radiation hazards, Lightning protection and its necessity, Lightning arrestor.

