

NEPAL TELECOM

Nepal Doorsanchar Company Ltd.

Syllabus

Syllabus for Free Competition written examination for Assistant Engineer (Telecom)
(Level 6)

Full Marks: 100

Pass Marks: 40

Time: 2 hours

Part II (Subject for Electrical Group)

Types of Questions	No. of Questions	Marks	Total	Remarks
Objective	30	1	30	1/4 marks will be deducted for each incorrect answer
Short-Answer Questions	10	4	40	
Long-Answer Questions	3	10	30	

Use of non-programmable calculator is permitted in the examination hall.

1 Basic Electricity and Electronics

(Weightage 20 to 30 %)

Electric current and Ohm's law, Kirchoff's law, Series and parallel circuits, Delta and Star Conversion, RLC circuits, Balanced and Unbalanced 3 phase circuits, Basic Circuit elements – Resistors, Capacitors, Inductors, Magnetism and electromagnetism, AC fundamentals, Single and Three phase circuit, Fundamentals of AC transmission and distribution Basic concepts on renewable energy, Solar Photo Voltaic Cell, Solar Modules, Solar Array, Switchgear and Protection : Circuit Breakers, MCB, MCCB, ELCB, Semiconductors, junction diodes, transistors, thyristors, Logic gates: AND, OR, NAND, NOR, EX-OR, EX- NOR Gates

2 Electrical Machines

(Weightage: 20-30%)

Magnetic Circuit Concept, Faradays laws of electromagnetic induction, Transformers, Generators, Lenz's law, Machines, Induction and Synchronous Motors, DC Motors, Synchronous Generators.

3 Power System Engineering

(Weightage:10-20%)

Three phase power systems, generating plants, Diesel, Hydro, Transmission systems, Distribution system.

4 Telecommunication Power Supply System

(Weightage:10-20%)

Rectifier, Batteries, Inverter, Stand, Stand by Diesel Generator, UPS, Voltage Regulator, Electric shock hazards, Type of earthing, Lightning and surge protection and its necessity, Lightning arresters, Converter, Switch mode power supply (SMPS), Solar Power system.

- 5 **Electrical Design, Drawings and Cost Estimation** (Weightage: 5-15%)
Wiring lay out for industrial Building, Electrical installation system, Electrical design and cost estimation, Material used in the electrical equipment, power cable, general concept of isometric view, electrical and electronic drawing.
- 6 **Electrical Measurements and Instrumentation** (Weightage:5-15%)
Fundamental of measurement, Current, Voltage and Power measuring instruments, Multimeter, Oscilloscopes, Principles of shunt.