Nepal Rastra Bank
Syllabus for
Electrical and Electronics Supervisor
Contract

Stages of Examination

1. **First Stage:** Written Examination **Full Marks: 100** **Pass Marks: 40**
2. **Second Stage:** Interview **Full Marks: 20**

Remarks:

1. In written examination, questions shall be asked in English.
2. Objective questions will be asked.
3. 20% marks will be deducted for each incorrect answer.
4. The candidates selected from the written examination will be called for the second stage examination.
5. This syllabus is applicable from September 11, 2023.

First Stage: Written Examination Full Marks: 100 Time: 1 hour

Examination System	Section	Number of Question and Marks	Marks
Multiple Choice Questions	1	5 questions × 2	10
	2.1	5 questions × 2	10
	2.2	5 questions × 2	10
	2.3	5 questions × 2	10
	2.4	5 questions × 2	10
	2.5	5 questions × 2	10
	2.6 & 2.7	5 questions × 2	10
	2.8 & 2.9	5 questions × 2	10
	2.10	5 questions × 2	10
	2.11	5 questions × 2	10
Total	**50 questions × 2 Mark**		**100**

1. General Awareness and Contemporary Issues

1.1 Geographical, socio-cultural, economic and demography of Nepal

1.2 The Constitution of Nepal

1.3 Governance system and Government (Federal, Provincial and Local)

1.4 Government planning, budgeting and accounting system

1.5 Banking and financial sector of Nepal

1.6 Nepal Rastra Bank : history, objectives, organizational structure and functions

1.7 Current Macroeconomic situation of Nepal

1.8 Major events and current affairs of national and international importance

1.9 Minting in Nepal: history, current scenario and coins in Nepal

2. Technical Subject:

2.1 **Electric Circuit:** Definition, Unit, Explanation and applications of Ohm's Law and Kirchhoff's Law, connection of resistors in series, parallel and series parallel Combination

2.2 **Electromagnetism and Electrostatics:** Definition and formation of hysteretic loop, force on a current carrying conductor placed in magnetic field, Self Inductance, Factors affecting the inductance of coil, Capacitor, Factors affecting the capacitance of capacitor, Time Constant.

2.3 **A.C. Fundamentals:** Comparison between A.C. & D.C. Voltage and current, Generation of A. C. emf, Frequency, Angular velocity, phase & phase difference, A. C. Circuit with R. L. C. use of J-operator in circuit analysis.

2.4 **Three Phase System:** Fundamental principles of Star and Delta connection of Three phase Windings, Effect of unbalanced load in three phase system, Voltage drop, Principles and applications of Super Position Theorem, Thevenin's theorem and Norton's theorem

2.5 **Safety precautions:** Wiring rules, regulations and code of practices, Electrical hazards and safety precautions, Earthling: Materials required for earthling, required parts to be earthed, procedure of earth testing and methods of earth resistance corrections.

2.6 **Principles of A. C. Transformer:** Operating principle, connecting load, No load operation, Reactance, Losses and Efficiency, Cooling, Parallel operation of single phase and three phase transformer, Tap changing, Noises and Temperature Rise.

2.7 **D. C. Generator:** Introduction and Principle of operation, constructional details, types, Losses and efficiency, Parallel operation of d. c. generators

2.8 **Ammeters and voltmeters:** Principle of operation, Power factor meter, General concept of measurement of Power, Energy, Frequency

2.9 **Communication System:** Basic Type of Signals and Systems, Amplitude Modulation and Demodulation; Frequency Modulation and Phase Modulation.

2.10 **Basic Electronics:** PN Junction Diode, Bipolar Junction Transistor, Field Effect Transistor (FET) and Special Semiconductor Devices.

2.11 **Transmission Lines:** Introduction-Overhead lines and Underground cables, Types of cables, Selection of cables & Selection criteria, Mechanical and electrical design of Overhead lines, Sag, Tension, Earthling, and connection schemes of distribution system.