



विद्युत अभियांत्रिकी विभाग
राष्ट्रीय प्रौद्योगिकी संस्थान श्रीनगर
DEPARTMENT OF ELECTRICAL ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR

Ph.D. Entrance Test Syllabus

Basic Electrical Engineering: DC Networks; Single phase AC Circuits; Three phase AC Circuits; Two Port Networks; Network Theorems; DC Transient Analysis.

Electric Machine: DC Machines, Transformers (Single phase & Three phase), Auto Transformers, Induction Machines (Single phase & Three phase); Synchronous Machines; Fractional & Sub fractional Horse Power Machines.

Mathematics: Laplace Transform; Inverse Laplace Transform; Fourier Transform; Ordinary Differential Equations; Linear Differential Equations.

Control Systems: Open loop and closed-loop control systems; Transient Response and Steady State Error Analysis; Frequency Response Analysis; Compensation Techniques; State Space Analysis.

Power Systems: Line Parameters; Performance of Transmission Lines; Overhead Line Insulators; Mechanical Design of Overhead Lines; Corona; Under Ground Cable; Power System Transients; Design of Transmission Lines; Power Circle diagram; Load flow analysis; Load frequency control; Economic Operation of power system; Power system stability.

Power Electronics: Power Semiconductor Devices; Rectifiers; AC-AC Converters; DC-DC Converters; Inverters; Pulse Width Modulation Techniques; Power Supply Applications.

Electrical Measurements: Electro-mechanical indicating instruments; Measurement of Power & Energy in single phase and three phase circuits; Measurement of Electrical Parameters using Bridges; Active & Passive Transducers.