



# DEPARTMENT OF ELECTRICAL ENGINEERING

(SCHOOL OF ELECTRICAL & COMPUTER SCIENCES)  
INDIAN INSTITUTE OF TECHNOLOGY BHUBANESWAR

## PhD Admission (Autumn-2026)

**Reporting Date: 19<sup>th</sup> May 2026**

**Interview Date: 19<sup>th</sup> and 20<sup>th</sup> May 2026**

### Typical Syllabus for Interview

1. Basic Electrical Engineering: DC Networks; Single phase AC Circuits; Three phase AC Circuits; Two Port Network; Theorems; DC Transient
2. Electric Machine: DC Machines, 1-Ph Transformer
3. Mathematics: Laplace Transform; Inverse Laplace Transform; Fourier Transform; Ordinary Differential Equation; Linear Differential Equation
4. Control Systems: Open loop and closed-loop control systems; Transient Response and Steady State Error Analysis; Root Locus Method; Frequency Response Analysis; Compensation Techniques; State Space Analysis
5. 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
6. Power Electronics: Power Semiconductor Devices; Rectifiers; AC-AC Phase control; DC-DC Converters; Inverters; Pulse Width Modulation; Power Supply Applications
7. AC Machine and Drives: Single Phase Induction Motor; Three-Phase induction motor; Synchronous Motor; Synchronous Generator; Auto Transformer; Three Phase Transformer; AC Drives; DC Drives.

**HoD, EE**