

# **Syllabus for PhD Admission Test 2021-22**

## **Dept. of Power Engg.**

### **RESEARCH METHODOLOGY SYLLABUS**

(for Ph.D. Admission Test)

1. Measurement: Concept of measurement. Scales of measurement - Nominal, Ordinal, Interval, Ratio. Error in measurement; Design of experiment, concept of independent & dependent variables; Data preparation and analysis (frequency tables, bar charts, pie charts, percentages), Error analysis. Concepts of accuracy, precision and resolution. Sensitivity analysis. Sample problems in measurement in research. (40%)
2. Mathematical Review: Concepts of set theory and probability, Linear algebraic equations. Differential equations – linear ODEs and PDEs. Complex numbers, Statistical methods, Concept of central tendencies, measurement of dispersion. Curve fitting, correlation and regression. Concept of different numerical methods. (40%)
3. Background of Basic Physical Science for Research: Concept of units and dimensions, Basics of Solid mechanics, thermodynamics, hydraulics, and electrodynamics. (20%)

### **SUBJECT SPECIFIC SYLLABUS**

(for Ph.D. Admission Test)

Candidate has to attempt either PART A or PART B in this section

PART A- Syllabus of GATE examination related to Mechanical Engineering

PART B- Syllabus of GATE examination related to Electrical Engineering