

G. NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE
(For Women)

(AUTONOMOUS)
Shaikpet, HYDERABAD - 500 104

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BASIC ELECTRICAL ENGINEERING LAB

(CSE & IT : I B.TECH-I SEM)
(EEE, ECE & ETE : I B.TECH-II SEM)

Prerequisites: -

Course Objectives:

1. To verify the Network Theorems and understand the usage of common electrical measuring instruments.
2. To understand the basic characteristics of transformers and electrical machines.
3. To get an exposure to the working of power electronic converters.

PART-A (Compulsory)

1. A) Basic Safety Precautions.
B) Study of measuring instruments & elements.
 - a) Voltmeters, Ammeters, Wattmeters, Multimeters, CRO.
 - b) Resistors, Inductors & Capacitors.
2. Study of Cut - out sections of
 - a) DC Machine b) 3- ϕ Induction Machine (cage type).
3. Study of Cut - out sections of
 - c) Synchronous Machine d) 1- ϕ Induction Machine.
4. A) Study of Converters
 - a) DC - DC converters.
 - b) DC - AC converters.B) Study of Components of LT switchgear
 - a) SFU b) MCB c) ELCB d) MCCB
5. Series resonance. Determination of Resonant frequency & Bandwidth.
6. Parallel resonance. Determination of Resonant frequency & Bandwidth.
7. Verification of Superposition theorem with DC excitation.
8. Verification of Thevenin's & Norton's theorems with DC excitation.

PART-B (Any Two)

1. Load test on a 1- ϕ transformer. Determination of efficiency.
2. Verification of voltage and current relations in a 3- ϕ transformer.
3. Measurement of Power in a 3- ϕ balanced load.

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(2) S. S. Kumar (5) - (8) K. K. K.
(3) S. S. Kumar (6) S. S. Kumar (9) S. S. Kumar

4. Torque v/s speed characteristics of a separately excited DC motor.
5. Torque-slip characteristics of a 3- ϕ Induction Motor.
6. OCC characteristics of a synchronous generator.

Note: All Experiments from PART-A and any Two Experiments from Part -B are to be conducted

Course Outcomes:

After completion of this course, students will be able to

1. Identify & use basic measuring instruments and their usage.
2. Verify different network theorems with dc excitation.
3. Carry out analysis of simple circuits with dc excitation.
4. Analyze bridge rectifiers.
5. Identify power converters.
6. Identify different electrical machines & their characteristics.

1) N. Mallekally

2) Mr. Jayadev

3) SPM

4) S. S. Subrahmanyam

5) —

6) Pradeep

7) Pradeep

8) Pradeep

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10) Pradeep

11) Pradeep

12) —

13) Pradeep

14) Pradeep

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