# G. NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE

(For Women)

(AUTONOMOUS)
Shaikpet, HYDERABAD - 500 104

**II Year B.Tech. EEE II-Semester**

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## ELECTRICAL MACHINES - II LAB

**Prerequisites:** Basic Electrical Engineering, Electrical Machines-I

**Course Objectives:**

1. To gain thorough knowledge about operation and the performance of AC Machines.
2. To understand Different starting methods of AC Machines.
3. To draw the performance characteristics of AC Machines for different load conditions.

**PART A**(compulsory)

1. OC & SC tests on a single phase transformer.
2. Brake test on a 3 phase Induction Motor.
3. No load & blocked rotor tests on a 3 phase Induction Motor.
4. Equivalent circuit of a single phase Induction Motor.
5. Sumpner's test.
6. Regulation of a three phase alternator by Synchronous Impedance & MMF methods.
7. V & inverted V curves of a three phase synchronous motor.
8. Determination of $X_d$ & $X_q$ of a salient pole synchronous machine.

**PART B** (Any two Experiments from the following list)

1. Regulation of 3 phase alternator by ZPF and ASA methods.
2. Separation of core losses of a single phase transformer.
3. Parallel operation of transformers.
4. Scott connection of Transformers.

**Course outcomes:**

After completion of this course student should be able to:

1. Analyze the characteristics of AC machines.
2. Carry out various tests to assess the performance of AC Machines
3. Understand different starting methods of AC Machines.
4. Know conceptual things to implement in real time applications.
5. Identify and analyze the methods for determination of regulation of a synchronous generator based on the merits.
6. Draw the equivalent circuits of different AC machines by conducting suitable experiments.

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2) M. Satyanarayana
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16) R. Balasubramanian