GOKARAJU RANGARAJU
INSTITUTE OF ENGINEERING AND TECHNOLOGY

AC MACHINES LAB

Course Code: GR15A2044 L:0 T:0 P:2 C:2
II Year II Semester

Course Objectives
- To prepare the students to have a basic knowledge of transformers.
- To prepare the students to have a basic knowledge of induction motors.
- To prepare the students to have a basic knowledge of alternators.
- To design a practical transformer.
- To know about an induction generator.

Course Outcomes
- Have knowledge of various parts of a electrical machine.
- Develop knowledge helpful for PhD.
- Able to conduct open circuit/ short circuit test on transformer.
- Ability to conduct experiments on Ac Machines to find the characteristics.
- Able to calculate torque and speed of given Machine.
- Ability to perform test on synchronous Machine to find Direct and quadrature axis reactance.
- Ability to conduct No Load and Full load tests on transformers/Induction Motor.

Contents
1. OC, SC and Load tests on single phase transformer.
2. Sumpner's test.
3. V and inverted V curves of a 3-phase synchronous motor.
4. Brake test on slip ring induction motor.
5. No-load and block rotor tests on squirrel cage induction motor.
6. Equivalent circuit of single phase induction motor.
7. Determination of Xd and Xq of a salient pole synchronous machine from slip test.
8. Regulation of alternator by synchronous impedance method and MMF method.
9. Hysteresis loss determination.
10. Scott connection.
11. Rotor resistance starter for slip ring induction motor.
12. Induction generator.
13. Heat run test on transformer.
14. Star - delta starter for squirrel cage induction motor.