B.Tech III Year I Semester
JNTUA COLLEGE OF ENGINEERING (AUTONOMOUS) PULIVENDULA
19AEE56- AC MACHINES LAB

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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

The following list all the ten experiments are required to be conducted as compulsory experiments:
1. No-load & Blocked-rotor tests on Squirrel cage Induction motor
2. Load test on three phase slip ring Induction motor.
3. Speed control of three phase induction motor
4. Rotor resistance starting for slip ring induction motor
5. Load test on single phase induction motor
6. Determination of Equivalent circuit of a single phase induction motor.
7. Predetermination of Regulation of a three phase alternator by synchronous impedance & m.m.f methods.
8. Predetermination of Regulation of three-phase alternator by Z.P.F. method.
9. Determination of Xd and Xq of a salient pole synchronous machine.
10. V and inverted V curves of a 3-phase synchronous motor.

Text Books:
1. Laboratory Manual for Electrical Machines by D. P.Kothari and B. S. Umre, I.KInternational Publishing House Pvt. Ltd, 2017.
2. A Laboratory Course in Electrical Machines by D.R. Kohli and S.K. Jain, NEM Chand &Bros.
3. Virtual Labs (vlab.co.in)

Reference Books:
1. J.S.R. Jang, C.T.Sun and E. Mizutami, "Neuro-Fuzzy & Soft Computing", Pearson India Education Services Pvt. Ltd.
2. LaurereFauselt, "Fundamentals of Neural Networks", Pearson India Education Services Pvt. Ltd..

Course Outcomes:
After the completion of the course the student should be able to:
- Able to conduct open circuit/ short circuit test on transformer — **L1**
- Ability to conduct experiments on Ac Machines to find the characteristics — **L2**
- Able to calculate torque and speed of given Machine. — **L3**
- Ability to perform test on synchronous Machine to find Direct and quadrature axis reactance. — **L4**
- Ability to conduct No Load and Full load tests on transformers/Induction Motor. — **L5**