

ELECTRICAL MACHINES LAB – II**Course Outcomes:**

A15285	ELECTRICAL MACHINES – II LAB
C317.1	Able to understand the basic working principle of a transformer; obtain the equivalent circuit parameters, estimate efficiency & regulation at various loads of 1- Φ transformers.
C317.2	Able to understand load sharing of transformers & conversion of 3- Φ to 2- Φ supply.
C317.3	Able to determine the equivalent circuit parameters of a single phase induction motor. Determine the performance characteristics of 3- Φ Induction motor & calculate its efficiency by direct and indirect methods.
C317.4	Able to analyze the regulation of an alternator by various methods at different power factors.
C317.5	Able to determine the synchronous motor's performance curves at various power factors and field currents.

LIST OF EXPERIMENTS

Any Ten of the following experiments are required to be conducted.

1. O.C & S.C tests on single phase transformer.
2. Sumpner's test on a pair of single phase transformer.
3. Brake test on three phase induction motor.
4. No-load & Blocked rotor tests on three phase induction motor.
5. Regulation of a three – phase alternator by synchronous impedance m.m.f methods.
6. V and inverted V curves of a three – phase synchronous motor.
7. Equivalent circuit of a single phase induction motor.
8. Determination of X_d and X_q of a salient pole synchronous machine.

In addition to the above eight experiments atleast any two of the following experiments are required to be conducted from the following list.

9. Regulation of three phase alternator by Z.P.F. and A.S.A methods
10. Scott connection of transformer and Parallel operation of single phase transformer.
11. Separation of core losses of a single phase transformer.
12. Load characteristics of three phase Induction Generator.

Reference books:

1. Electric machinery- P.S. Bimbra, Khanna Publishers, 7th edition, 2010.
2. Theory and Performance of Electrical Machines- JB. Gupta, S.K. Kataria and Sons, 2009.
3. Electro mechanics (transformers and induction motors) – S.Kamakshiah, Hitech publishers 2009.