



SANTHIRAM ENGINEERING COLLEGE, NANDYAL

Department of Electrical and Electronics Engineering

Name of the Laboratory: ELECTRICAL MACHINES – II

Regulation: R15

Branch: Electrical and Electronics Engineering

Year & Sem: III-I

Course Objectives

- To experiment in detail on Transformers, Induction Motors, Alternators and
- Synchronous Motors, and evaluate their performance characteristics.

Course Outcomes

- After going through this laboratory course, the student acquires sufficiently good practical knowledge about the operation, testing, and characteristics of important A.C equipment like transformers, Induction Motors, Alternators and Synchronous Motors.
- The student should also have acquired the knowledge about the fixation of the rating of transformers, induction motors and synchronous machines.

List of Experiments

1. O.C. & S.C. Tests on Single phase Transformer.
2. Sumner's Test on a Pair of identical Single Phase Transformers
3. Scott Connection of Transformers
4. No-Load & Blocked Rotor Tests on Three Phase Induction Motor
5. Regulation of Three –Phase Alternator by Synchronous Impedance & M.M.F. Methods
6. V and Inverted V Curves of 3 Phase Synchronous Motor.
7. Equivalent Circuit of Single Phase Induction Motor
8. Determination of X_d and X_q of Salient Pole Synchronous Machine

In addition to the above eight experiments, at least any two of the following experiments are required to be conducted:

1. Parallel Operation of Single Phase Transformers
2. Separation of Core Losses of Single Phase Transformer
3. Brake Test on Three Phase Induction Motor
4. Regulation of Three-Phase Alternator by Z.P.F. and A.S.A Methods

List of Equipments

1. 1-Phase Transformer (Dry Type) 2 KVA with Auto Transformers & Equipment (0-270V/10A)
2. 3-Phase Auto Transformers
3. 3-Phase, 5HP, 1500 RPM, Squirrel cage Induction Motor
4. 5 Hp, 220 V, 1500 RPM Shunt Wound DC Motor Coupled to 3-Phase 415 V, 1500 RPM, 50 Hz 4 Pole Rotor Wound, Star Salient Pole Alternator
5. 3-Phase Synchronous Motor with Loading Arrangement & Control Panel (5HP,415V,1500RPM/50Hz)
6. 1-Phase Induction Motor with Mechanical Loading Arrangement Having Linear Scale Friction Belt for Torque Measurement
7. 5 Hp, 220 V, 1500 RPM DC Shunt Motor Coupled to 3-Phase 415 V, 1500 RPM, 3.5 KVA Alternator



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