

2/4 B.Tech - THIRD SEMESTER

EC3L2

Electrical Technology Lab

Credits: 2

Lecture : ---

Lab : 3 periods/week

Internal assessment: 25 marks

Semester end examination: 50 marks

Course Objectives:

- To understand different testing methods for DC and AC machines, Transformers.
- To explore performance calculations of PV cells

Learning Outcomes:

- Understand different testing methods for AC & DC Machines, Transformers.
- Be familiar with the performance calculations of PV cells

NOTE: Minimum of 10 experiments has to be performed and recorded by the candidate to attain eligibility for External Practical Examination.

List of Experiments:

1. Magnetization characteristics of DC shunt generator. Determination of critical field resistance and critical speed.
2. Swinburne's test on DC shunt machine (Predetermination of efficiency of a given DC shunt machine working as Generator and Motor)
3. Brake test on DC shunt motor. Determination of performance curves.
4. OC & SC test on single phase transformer for Predetermination of efficiency.
5. OC & SC test on single phase transformer for determination of regulation at given power factors and equivalent circuit parameters.
6. Brake test on three phase induction motor. Determination of performance curves
7. Speed control of DC shunt motor by Field and armature Control
8. Load test on DC shunt generator. Determination of DC shunt generator characteristics.
9. Load test on DC compound generator. Determination of DC compound generator characteristics.
10. Load test on DC series generator. Determination of DC series generator characteristics.
11. Brake test on DC compound motor. Determination of DC compound motor performance curves.
12. Magnetization characteristics of an alternator.
13. Regulation of alternator by using synchronous impedance method
14. V-I characteristics of PV cells (identifying and measuring the parameters of solar PV module) both Mono crystalline & Polycrystalline
15. Maximum power point tracking (MPPT) characteristics for both Mono crystalline & Polycrystalline PV modules