2/4 B.Tech - THIRD SEMESTER

EC3L2 Network & Electrical Technology Lab Credits: 2

Lecture: - Internal assessment: 25 marks
Lab : 3 period /week Semester end examination: 50 marks

Course Objectives:

- To understand and study various network parameters
- To implement various network theorems
- To understand different testing methods of A.C & D.C Machines

Learning Outcomes:

Student will be able to

- Apply the fundamental laws to the design and analysis of circuits.
- Analyze linear electrical circuits using the modified nodal analysis, mesh analysis and network theorems.
- Test A.C & D.C Machines using different techniques.

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

1. Verification of Superposition and Reciprocity theorems.
2. Verification of maximum power transfer theorem.
3. Experimental determination of Thevenin's and Norton's equivalent circuits and verification by direct test.
4. Two port network parameters – Z-Y Parameters
5. Magnetization characteristics of D.C. Shunt generator. Determination of critical field resistance.
6. Swinburne's Test on DC shunt machine (Predetermination of efficiency of a given DC Shunt machine working as motor and generator).
7. Load test on DC shunt generator. Determination of DC shunt generator characteristics.
8. Load test on DC compound generator. Determination of DC compound generator characteristics.
9. Brake test on DC shunt motor. Determination of performance characteristics.
10. OC & SC tests on Single-phase transformer (Predetermination of efficiency and regulation at given power factors and determination of equivalent circuit).
11. Brake test on 3-phase Induction motor (performance characteristics).
12. Regulation of alternator by synchronous impedance method