Power Systems Lab

Objective: To impart the practical knowledge of functioning of various power system components and determination of various parameters and simulation of load flows, transient stability, LFC and Economic dispatch.	

Sections Handled: 4- 1

Major Equipment Details:

Sl.No	Equipment Name	Qty
1	Sequence impedance of 3 phase Transformer Set up 2KVA	1
2	Three Phase Variac (0 – 470V, 10A)	1
3	Sequence impedance of 3 phase Alternator by Fault Analysis / direct load test Set up 3.5KVA Accessories: ➢ 3-ϕ Voltmeter ➢ 3 Pole Timer Switch ON/OFF ➢ 1-ϕ Variac (4A) ➢ Load Rheostat (25Ω, 5A) ➢ 3 Pole ON/OFF Switch ➢ Rheostat (300Ω, 2A)	1
4	Single Phase Variac (0-250V, 4A)	1
5	ABCD parameters of Transmission Network set up 400Km	1
6	Power Angle characteristics of 3-phase Alternator set up 5KVA Accessories: ➢ Stroboscope ➢ Rheostat (300Ω, 2A) ➢ 1-ϕ Variac (4A) ➢ Sequence Meter	1
7	Multimeter 13S	1
8	Oil Test Kit 60Kv Accessory: ➢ Electro distance Scale	1
9	Calibration of Tong Tester Accessory: ➢ Tong Tester (1000A)	1
10	HP Computers (Monitor + CPU + Mouse + Keyboard)	8
11	UPS (+ 8 Batteries)	1

Faculty In charge with qualification: **Ch.Anil Kumar, M.Tech**

Lab Technical name with qualification: **N. Ramesh Babu, Diplamo**
Experiment list as per curriculum:
1. Sequence impedances of 3 phase Transformer. 2. Sequence impedances of 3 phase Alternator by Fault Analysis. 3. Sequence impedances of 3 phase Alternator by Direct method. 4. ABCD parameters of Transmission network. 5. Power Angle Characteristics of 3phase Alternator with infinite bus bars. 6. Dielectric strength of Transformer oil. 7. Calibration of Tong Tester. 8. Load flow studies by Gauss Seidel Method 9. Load flow studies by Newton Raphson Method 10. Transient Stability Analysis 11. Load frequency control without control 12. Load frequency control with control 13. Economic load dispatch without losses 14. Economic load dispatch with losses.
Experiment list beyond the curriculum
1. Formation of Bus Admittance and Impedance Matrices 2.Synchronization of Alternator with Infinite Bus Bar