Department of Electrical Engineering
B.I.T. Sindri, Dhanbad-828123

NETWORK THEORY LABORATORY

LIST OF EXPERIMENTS

Sl.No.	Name of Experiment
Expt. No.1	Transient response of RC circuit.
Expt. No.2	Transient response of RL circuit.
Expt. No.3	To find the resonant frequency, Band width of RLC series circuit.
Expt. No.4	To study and verify effect of R on frequency response of parallel resonance circuit.
Expt. No.5	To calculate and verify "Z" Parameters of a two port network.
Expt. No.6	To calculate and verify "Y" Parameters of a two port network.
Expt. No.7	To determine equivalent parameter of parallel connections of two port network.
Expt. No.8	To plot the frequency response of low pass filter and determine half-power frequency.
Expt. No.9	To plot the frequency response of high pass filter and determine the half-power frequency.
Expt. No.10	To plot the frequency response of band-pass filter and determine band-width.
Expt. No.11	To calculate and verify "ABCD" Parameters of a two port network.
Expt. No.12	To synthesize a network of a given network function and verify its response.
Expt. No.13	Introduction of P-Spice or other simulation software.

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ELECTRICAL MEASUREMENT & INSTRUMENTATION LABORATORY

LIST OF EXPERIMENTS

Sl.No.	Name of Experiment
Expt. No.1	Measurement of resistance using kelvin's double bridge.
Expt. No.2	Measurement of inductance using maxwell's inductance bridge.
Expt. No.3	Measurement of inductance using maxwell's inductance and capacitance bridge.
Expt. No.4	Measurement of capacitance using schering bridge
Expt. No.5	Study of linear variable displacement transducer.
Expt. No.6	Study of an electrical transducer.
Expt. No.7	Study of current and voltage in passive loads in three phase delta and star configuration.
Expt. No.8	Study of optical transducer.
Expt. No.9	Measurement of the inductance of a coil by three voltmeters.
Expt. No.10	Measurement of strain using strain gauge.

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ELECTRICAL MACHINE-II LABORATORY

LIST OF EXPERIMENTS

Sl.No.	Name of Experiment
Expt. No.1	To perform No Load & blocked rotor test on a three phase induction motor & draw the circle diagram.
Expt. No.2	Speed control of a 3-phase induction motor by rheostatic, cascading and pole changing methods.
Expt. No.3	Load test on three phase induction motor & draw the various characteristics.
Expt. No.4	To perform slip test on a given alternator and to determine d-axis reactance (Xd) and q-axis reactance (Xq)
Expt. No.5	Determination of sub-transient reactance of a synchronous generator by static method.
Expt. No.6	To perform load test on Schrage motor at different speed setting (1000, 1400 rpm).
Expt. No.7	To perform open circuit test and short circuit tests on a three phase Synchronous generator and calculate its voltage regulation by Synchronous impedance method.
Expt. No.8	Determination of V curve and Inverted V curve of a 3-phase Synchronous motor at no-load.
Expt. No.9	To perform load test on single phase capacitor motor.
Expt. No.10	To determine the negative and zero sequence reactance of a given alternator.
Expt. No.11	To perform open circuit test and short circuit tests on a three phase Synchronous generator and calculate its voltage regulation by Synchronous impedance method.
Expt. No.12	To determine voltage regulation of three phase Synchronous generator by ZPF method.
Expt. No.13	Synchronization of two alternators and their load sharing.

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ELECTRICAL MACHINE-I LABORATORY

LIST OF EXPERIMENTS

Sl.No.	Name of Experiment
Expt. No.1	To determine transformer winding polarity and explore the impact of connecting winding in series adding and series opposing configurations.
Expt. No.2	To perform the short circuit and open circuit test of single phase transformer and draw the equivalent circuit.
Expt. No.3	To determine regulation and efficiency of a single phase transformers using direct loading test.
Expt. No.4	To perform back to back test on two identical single phase transformer and hence calculate their efficiency at different load and power factor.
Expt. No.5	To study power sharing between two single phase transformers operated in parallel.
Expt. No.6	To perform load test on a three phase transformer to calculate the efficiency and voltage regulation at unity power factor.
Expt. No.7	To study about different types of DC motor stators.
Expt. No.8	To perform load test on DC Shunt motor and to obtain its internal and external characteristics.
Expt. No.9	To study the characteristics of speed control of DC motor by using WardLeonard Method.
Expt. No.10	To pre-determine the efficiency of a DC Shunt machine considering it as a motor by performing Swinburne's test on it.

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POWER SYSTEM-II LABORATORY

LIST OF EXPERIMENTS

Sl.No.	Name of Experiment
Group-A: Simulation based (using MATLAB or any other software) (Perform at least Seven Experiments)	
Expt. No.1	Formation of Bus admittance matrix.
Expt. No.2	Solution of load flow problem using Gauss-Seidel method.
Expt. No.3	Solution of load flow problem using Newton-Raphson method.
Expt. No.4	Solution of load flow problem using Fast Decoupled Method.
Expt. No.5	Formation of Z-bus matrix.
Expt. No.6	Application of Swing equation and its solution to determine transient stability.
Expt. No.7	Simulation of LFC for two area power system.
Expt. No.8	Economic load dispatch without considering network losses.
Expt. No.9	Economic load dispatch considering network losses.
Expt. No.10	To perform symmetrical fault analysis in a power system
Group-B: Hardware based (Perform at least Three Experiments)	
Expt. No.1	Determination of negative and zero sequence synchronous reactance of an alternator
Expt. No.2	Determination of fault current for L-G, L-L, L-L-G and L-L-L faults at the terminals of an alternator at very low excitation.
Expt. No.3	Determination of fault location in a cable using cable fault locator.
Expt. No.4	Determination of power angle characteristics of an Alternator.