K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BANGALORE -560109
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
LIST OF EXPERIMENTS-BASIC ELECTRICAL ENGINEERING LABORATORY

Subject code :18ELEL17

1	Verification of KCL & KVL for DC circuits
2	Measurement of current, power & power factor of fluorescent lamp
3	Measurement of Resistances & Inductances of a Choke Coil Using 3 Voltmeter Method
4	Two way & Three way control of lamp and verification of truth table
5	Measurement of three phase power using two wattmeter method
6	To study the effect of open circuit and short circuit on simple circuit
7	Measurement of Earth resistances
8	Determination of phase & line quantities in 3 phase star & delta connected load
9	Demonstration of FUSE and MCB separately by creating fault
10	Demonstration of cut-out sections of electrical machines(dc machines, induction machines, synchronous machines)
11	Understanding ac and dc supply. use of tester and test lamp to ascertain the healthy status of mains.
12	Understanding UPS

Lab Incharge PRATHIKSHA

Tejaswini.G.v.

Ramya K.R

AKSHAY KUMAR.D

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

LIST OF EXPERIMENTS- ELECTRICAL MACHINES LABORATORY – 1

Subject Code: 18EEL37

Sl. No	Experiments
1	Open Circuit and Short circuit tests on single phase step up or step down transformer and predetermination of (i) Efficiency and regulation (ii) Calculation of parameters of equivalent circuit.
2	Sumpner's test on similar transformers and determination of combined and individual transformer efficiency.
3	Parallel operation of two dissimilar single-phase transformers of different kVA and determination of load sharing and analytical verification given the short circuit test data.
4	Polarity test and connection of 3 single-phase transformers in star – delta and determination of efficiency and regulation under balanced resistive load.
5	Comparison of performance of 3 single-phase transformers in delta – delta and V – V (open delta) connection under load.
6	Scott connection with balanced and unbalanced loads.
7	Separation of hysteresis and eddy current losses in single phase transformer.
8	Voltage regulation of an alternator by EMF and MMF methods.
9	Voltage regulation of an alternator by ZPF method.
10	Power angle curve of synchronous generator or Direct load test on three phase synchronous generator to determine efficiency and regulation
11	Slip test – Measurement of direct and quadrature axis reactance and predetermination of regulation of salient pole synchronous machines.
12	Performance of synchronous generator connected to infinite bus, under constant power and variable excitation & vice - versa.

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1	Design and testing of full wave – centre tapped transformer type and bridge type rectifier circuits with and without capacitor filter. Determination of ripple factor, regulation and efficiency.
2	Static transistor characteristics for ce, cb and cc modes and determination of h parameters.
3	Frequency response of single stage bjt and fet rc coupled amplifier and determination of half power points, bandwidth, input and output impedances.
4	Design and testing of bjt - rc phase shift oscillator for given frequency of oscillation.
5	Determination of gain, input and output impedance of bjt darlington emitter follower with and bootstrapping.
6	Simplification, realization of boolean expressions using logic gates/universal gates.
7	Realization of half/full adder and half/full subtractors using logic gates.
8	Realization of parallel adder/subtractors using 7483 chip- bcd to excess-3 code conversion and vice - versa.
9	Realization of binary to gray code conversion and vice versa.
10	Design and testing ring counter/johnson counter.
11	Design and testing of sequence generator.
12	Realization of 3 bit counters as a sequential circuit and mod – n counter design using 7476, 7490, 74192, 74193.

Lab Incharge   *Ramya K.R*

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LIST OF EXPERIMENTS – MICROCONTROLLER LAB

Subject code:15EEL57

1	Data transfer – Program for block data movement, sorting, exchanging, finding largest element in an array.
2	Arithmetic instructions: Addition, subtraction, multiplication and division. Square and cube operations for 16 bit numbers.
3	Counters
4	Boolean and logical instructions (bit manipulation).
5	Conditional call and return instructions.
6	Code conversion programs – BCD to ASCII, ASCII to BCD, ASCII to decimal, Decimal to ASCII, Hexa decimal to and Decimal to Hexa.
7	Programs to generate delay, Programs using serial port and on-chip timer/counters.
8	Stepper motor interface.
9	DC motor interface for direction and speed control using PWM.
10	Alphanumerical LCD panel interface.
11	Generate different waveforms: Sine, Square, Triangular, Ramp using DAC interface.
12	External ADC and Temperature control interface.
13	Elevator interface.

Gousia Sultana

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SLNO	EXPERIMENTS
1	Static Characteristics of SCR.
2	Static Characteristics of MOSFET and IGBT
3	Characteristic of TRIAC
4	SCR turn on circuit using synchronized UJT relaxation oscillator
5	SCR digital triggering circuit for a single phase controlled rectifier and ac voltage regulator.
6	Single phase controlled full wave rectifier with R and R –L loads
7	AC voltage controller using TRIAC and DIAC combination connected to R and RL loads
8	Speed control of dc motor using single semi converter
9	Speed control of stepper motor.
10	Speed control of universal motor using ac voltage regulator.
11	Speed control of a separately excited D.C. Motor using an IGBT or MOSFET chopper.
12	Design of Snubber circuit.

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LIST OF EXPERIMENTS RELAY AND HIGH VOLTAGE ENGINEERING LABORATORY

Subject code :15EEL77

1.	DMT charteristics of over voltage Relay (static type relay)
2	DMT charteristics of under voltage Relay (static type relay)
3	DMT charteristics of over voltage (numerical) relay
4	IDMT charteristics of electromechanical Non -directional type over current Relay
5	Charteristics of numerical type Non-directional type over current Relay
6	Charteristics of electromechanical Directional type over current Relay
7	IDMT charteristics of numerical type Directional type over current Relay
8	Generator protection (Merz price scheme)
9	Measurement of Breakdown strength of Transformer oil as per is 1876 :2005
10	Feeder protection against faults.
11	Spark over characteristics of air subjected to High voltage ac with spark voltage corrected to standard temperature and pressure for uniform [as per is1876: 2005]and non-uniform [as per is2071(part 1) : 1993] configurations: sphere – sphere, point –plane, point – point and plane – plane.
12	Spark over characteristics of air subjected to High voltage DC.
13	Measurement of HVAC and HVDC using standard spheres

Lab Incharge *Anil Kumar T.R.B*
TRB

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LIST OF EXPERIMENTS – POWER SYSTEM SIMULATION LAB (15EEL76)

1	Use of MATLAB package Formation for symmetric π /T configuration for Verification of $AD - BC = 1$, Determination of Efficiency and Regulation
2	Determination of Power Angle Diagrams, Reluctance Power, Excitation, Emf and Regulation for Salient and Non-Salient Pole Synchronous Machines.
3	Y Bus Formation for Power Systems with and without Mutual Coupling, by Singular Transformation and Inspection Method which part is supplied to which project by which supplier.
4	Determination of Bus Currents, Bus Power and Line Flow for a Specified System Voltage (Bus) Profile
5	Use of Mi-Power package Formation of Jacobian for a System not Exceeding 4 Buses (No PV Buses) in Polar Coordinates
6	Load Flow Analysis using Gauss Siedel Method, NR Method and Fast Decoupled Method for Both PQ and PV Buses
7	Optimal Generation Scheduling for Thermal power plants by simulation
8	To Determine Fault Currents and Voltages in a Single Transmission Line System with Star-Delta Transformers at a Specified Location for LG and LLG faults by simulation
9	Formation of Z Bus(without mutual coupling) using Z-Bus Building Algorithm
10.	To obtain Swing Curve and to Determine Critical Clearing Time, Regulation, Inertia Constant/Line Parameters /Fault Location/Clearing Time/Pre-Fault Electrical Output for a Single Machine connected to Infinite Bus through a Pair of identical Transmission Lines Under 3-Phase Fault On One of the two Lines

Lab Incharge

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