Ref No:

< Sri Krishna Institute of Technology, Bengaluru>

COURSE PLAN

Academic Year 2018-2019

Program:	B E – Electrical & Electronics Engineering
Semester :	1
Course Code:	18ELEL17
Course Title:	Basic Electrical Engineering Laboratory
Credit / L-T-P:	1 / 0-0-2
Total Contact Hours:	30
Course Plan Author:	AVINASH S

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Table of Contents

Note : Remove “Table of Content” before including in CP Book
Each Laboratory Plan shall be printed and made into a book with cover page
Blooms Level in all sections match with A.2, only if you plan to teach / learn at higher levels

18ELEL17 : BASIC ELECTRICAL ENGINEERING LAB

A. LABORATORY INFORMATION

1. Lab Overview

Degree:	B.Tech	*Program:*	EE
Year / Semester :	1 / 1	*Academic Year:*	2018-19

Course Title:	Basic Electrical Engineering Lab	*Course Code:*	18ELEL17
Credit / L-T-P:	1 / 0-0-2	*SEE Duration:*	180 Minutes
Total Contact Hours:	30 Hrs	*SEE Marks:*	60 Marks
CIA Marks:	40	*Assignment*	1 / experiment
Course Plan Author:	Mr. Avinash S	*Sign*	Dt :
Checked By:		*Sign*	Dt :

2. Lab Content

Unit	Title of the Experiments	Lab Hours	Concept	Blooms Level
1	VERIFICATION OF KCL AND KVL FOR DC CIRCUITS.	3	DC circuits	L3
2	MEASUREMENT OF CURRENT, POWER AND POWER FACTOR OF INCANDESCENT LAMP, FLUORESCENT LAMP AND LED LAMP	3	Measurements of Electrical Quantities	L2
3	MEASUREMENT OF RESISTANCE AND INDUCTANCE OF A CHOKE COIL USING 3-VOLTMETER METHOD	3	Choke Coil	L2
4	DETERMINATION OF PHASE AND LINE QUANTITIES IN THREE PHASE STAR AND DELTA CONNECTION	3	Star-delta connection	L3
5	MEASUREMENT OF THREE PHASE POWER USING TWO WATTMETER METHOD	3	3phase power	L2
6	TWO WAY AND THREE WAY CONTROL OF LAMP	3	Lamp control	L2
7	MEASUREMENT OF EARTH RESISTANCE	3	Earth resistance	L2
8	STUDY OF EFFECT OF OPEN AND SHORT CIRCUITS IN SIMPLE CIRCUITS	3	OC & SC	L2

3. Lab Material

Expt.	Details	Expt. in book	Availability
A	**Text books (Title, Authors, Edition, Publisher, Year.)**	**-**	**-**
2,6,7,9,10	1 Basic Electrical Engineering D C Kulshreshtha Tata McGraw Hill, Revised First Edition	-	In Lib / In Dept
1,3,4,5,8,11,12	2 Principles of Electrical Engineering & Electronics V.K. Mehta, Rohit S.ChandPublications	-	In Lib/ In dept
B	**Reference books (Title, Authors, Edition, Publisher, Year.)**	**-**	**-**
12	1 Fundamentals of Electrical Engineering and Electronics B. L. Theraja S. Chand & Company Ltd, Reprint Edition 2013.	-	In Lib
8,	2 Electrical Technology E. Hughes International Students 9th Edition, Pearson, 2005	-	In Lib
3	3 Basic Electrical Engineering D. P. Kothari and I. J. Nagrath Tata McGraw Hill, 2017.	-	In lib
C	**Concept Videos or Simulation for Understanding**	**-**	**-**
	Ohm's law by Dc circuits https://www.youtube.com/watch?v=liLJj7NS4DI		
	Measurement of electrical quantities of different lamps		
	Resistance and Inductance of choke coil		

	https://www.youtube.com/watch?v=lY_jtjjFklM		
	Control methods of Lamps https://www.youtube.com/watch?v=6z-R7pZUIds		
	Star and Delta connection https://www.youtube.com/watch?v=9b17eqCT4-g https://www.youtube.com/watch?v=9b17eqCT4-g		
	Measurements of 3 phase power https://www.youtube.com/watch?v=0BMU1qLzFhg https://www.youtube.com/watch?v=784LkH03L1E		
	Earth Resistance https://www.youtube.com/watch?v=aXhT9UT9Ld8 https://www.youtube.com/watch?v=M3fWNAIKGaM		
	OC and SC test https://www.youtube.com/watch?v=_wevDhc_rG0 https://www.youtube.com/watch?v=9hBmgdGjt1Y		
D	**Software Tools for Design**	**-**	**-**
	-		
E	**Recent Developments for Research**	**-**	**-**
F	**Others (Web, Video, Simulation, Notes etc.)**		
	Nptel online video lecture	Www.onlinecourses.nptel.ac.in	Nptel online video lecture

4. Lab Prerequisites:

-	-	Base Course:		-	-
SNo	Course Code	Course Name	Topic / Description	Sem	Remarks
		-	-		

Note: If prerequisites are not taught earlier, GAP in curriculum needs to be addressed. Include in Remarks and implement in B.5.

5. General Instructions

SNo	Instructions	Remarks
1	Observation book and Lab record are compulsory.	
2	Students should report to the concerned lab as per the time table.	
3	After completion of the program, certification of the concerned staff in-charge in the observation book is necessary.	
4	Student should bring a notebook of 100 pages and should enter the readings /observations into the notebook while performing the experiment.	
5	The record of observations along with the detailed experimental procedure of the experiment in the Immediate last session should be submitted and certified staff member in-charge.	
6	Should attempt all problems / assignments given in the list session wise.	
7	It is responsibility to create a separate directory to store all the programs, so that nobody else can read or copy.	
8	When the experiment is completed, should disconnect the setup made by them, and should return all the components/instruments taken for the purpose.	
9	Any damage of the equipment or burn-out components will be viewed seriously either by putting penalty or by dismissing the total group of students from the lab for the semester/year	
10	Completed lab assignments should be submitted in the form of a Lab	

	Record in which you have to write the algorithm, program code along with comments and output for various inputs given	

6. Lab Specific Instructions

SNo	Specific Instructions	Remarks
1	Students are expected to study the circuit, theory and procedures, expected output before doing the experiment.	
2	Multi-meter adjustments:- a. Set the right mode before taking the readings. b. For current reading, connect the multimeter in mA (or A) mode to the circuit before switching on the supply. Do not remove the current meter when the supply is on. Check for ac and dc modes as required. c. For voltage reading ensure that proper ac or dc setting. d. Use the proper leads for the measurement. Wrong cables damage the instrument.	
3	Don't pull out the connections with the power supply on.	
4	Wear your College ID card Do not operate the IC trainer kits without permission	
5	Avoid loose connection and short circuits	
6	Do not panic if you do not get the output	
7	After completion of the experiment switch off the power and return the components	

B. OBE PARAMETERS

1. Lab / Course Outcomes

#	Lab Code #	COs	Teach. Hours	Concept	Instr Method	Assessment Method	Blooms' Level
1	18ELEL17.1	Analysis of DC circuits by using KVL & KCL	3	DC circuits	Conduction demo	Viva & test	L3
2	18ELEL17.2	Analysis the incandescent lamp, FL, LED lamp & measure the current,power & power factor	3	measurements	Conduction demo	Viva & test	L2
3	18ELEL17.3	Analysis the chockcoil & measurement of resistance & inductance by using 3 voltmeter method	3	Chock coil	Conduction demo	Viva & test	L2
4	18ELEL17.4	Determine phase & line voltage by using star delta connection	3	Star delta connection	Conduction demo	Viva & test	L3
5	18ELEL17.5	Determine the impedance of electric circuit impedence by using 3phase load	3	3phase power	Conduction demo	Viva & test	L2
6	18ELEL17.6	Understand lamp,switches & lamp controller by two way & three way switches	3	Lamp control	Conduction demo	Viva & test	L2
7	18ELEL17.7	Determine earth resistance by using Erath Tester	3	Earth resistance	Conduction demo	Viva & test	L2
8	18ELEL17.8	Study the circuit & effect of OC & SC circuits	3	OC &SC circuits	Conduction demo	Viva & test	L2
-		**Total**		-	-	-	-

Note: Identify a max of 2 Concepts per unit. Write 1 CO per concept.

2. Lab Applications

SNo	Application Area	CO	Level
1	The practical application of KCL and KVL is to determine the amount of current flowing through individual electronic component in a circuit and voltage drop in each one. Using that law we can manipulate voltage and current to the component by controlling resistance to it. https://www.youtube.com/watch?v=cUu81ISbD6o	CO1	L3
2	In Lighntings	CO6	L2
3	Used in fluorescent lamps	CO6	L2
4	Used in residential, appartments and in industries.	CO6	L3
5	Used in connection of various loads.	CO4	L2
6	Used to measure 3phase power.	CO4	L2
7	To measure earth resistance.	CO6	L2
8	Used to calculate transformer losses.	CO5	L2

Note: Write 1 or 2 applications per CO.

3. Mapping And Justification

CO – PO Mapping with mapping Level along with justification for each CO-PO pair.
To attain competency required (as defined in POs) in a specified area and the knowledge & ability required to accomplish it.

Expt.	Mapping		Mapping Level	Justification for each CO-PO pair	Level
-	CO	PO	-	**'Area': 'Competency' and 'Knowledge' for specified 'Accomplishment'**	-
1	1	1	2	Knowledge of Ohm'slaw is required to measure voltage drops and division of currents in DC circuits.	L2
	1	2	2	Analysis of voltage drops and division of currents need knowledge of Ohm'slaw	L3
2	2	1	2	Knowledge of different lamps required for less power consumption.	L2
3	3	1	2	Knowledge of choke coil required to use in florescent lamps.	L2
	3	2	2	Analysis of choke coil required to measure resistance and inductance.	L2
4	4	1	2	Knowledge of wiring methods are required to control lamps.	L3
5	5	1	2	Knowledge of star and delta connection ids required for connection of loads w.r.t voltage and current.	L2
6	6	1	2	Knowledge of wattmeter is required to measure 3 phase power.	L2
7	7	1	2	Knowledge of earthing is required for safety purpose.	L2
8	8	1	2	Knowledge of Transformer is required to measure losses.	L2
	8	2	2	Analysis losses to measure iron and copper loss in Transformer.	L2

4. Articulation Matrix

(CO – PO MAPPING)

-	Course Outcomes	Program Outcomes												
#	COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	Level
18ELEL17.1	Analysis of DC circuits by using KVL & KCL	2	2											
18ELEL17.2	Analysis the incandescent lamp, FL, LED lamp & measure the current,power & power factor	2												L2
18ELEL17.3	Analysis the choke coil &	2	2											L2

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	measurement of resistance & inductance by using 3 voltmeter method													
18ELEL17.4	Determine phase & line voltage by using star delta connection	2												L3
18ELEL17.5	Determine the impedance of electric circuit impedence by using 3phase load	2												L2
18ELEL17.6	Understand lamp,switches & lamp controller by two way & three way switches	2												L2
18ELEL17.7	Determine earth resistance by using megger	2												L2
18ELEL17.8	Study the circuit & effect of OC & SC circuits	2	2											L2
CS501PC.	Average													

Note: Mention the mapping strength as 1, 2, or 3

5. Curricular Gap and Content

SNo	Gap Topic	Actions Planned	Schedule Planned	Resources Person	PO Mapping
1		-			

Note: Write Gap topics from A.4 and add others also.

6. Content Beyond Syllabus

SNo	Gap Topic	Actions Planned	Schedule Planned	Resources Person	PO Mapping
1		-			

Note: Anything not covered above is included here.

C. COURSE ASSESSMENT

1. Course Coverage

Unit	Title	Teaching Hours	No. of question in Exam							CO	Levels
			CIA-1	CIA-2	CIA-3	Asg-1	Asg-2	Asg-3	SEE		
1											
-	**Total**										-

Note: Write CO based on the theory course.

2. Continuous Internal Assessment (CIA)

Evaluation	Weightage in Marks	CO	Levels
CIA Exam – 1	30	CO1, CO2, CO3, CO4	L23, L3
CIA Exam – 2	30	CO5, CO6, CO7,	L1, L2, L3 . .
CIA Exam – 3	30	CO8, CO9	L1, L2, L3 . .
Assignment - 1	05	CO1, CO2, CO3, CO4	L2, L3, L4 …
Assignment - 2	05	CO5, CO6, CO7, CO8, CO9	L1, L2, L3 …
Assignment - 3	05	CO8, CO9	L1, L2, L3 …
Seminar - 1	05	CO1, CO2, CO3, CO4	L2, L3, L4 . ..
Seminar - 2	05	CO5, CO6,CO7,CO8, CO9	L2, L3, L4 . ..
Seminar - 3	05	CO8, CO9	L2, L3, L4 . ..
Other Activities – define – Slip test		CO1 to Co9	L2, L3, L4 . ..

Final CIA Marks	**40**	**-**	**-**

-

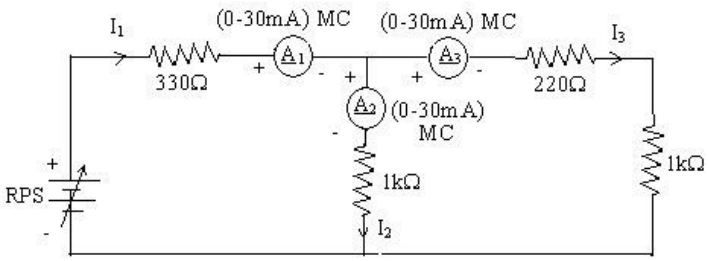
SNo	Description	Marks
1	Observation and Weekly Laboratory Activities	15 Marks
2	Record Writing	15 Marks for each Expt
3	Internal Exam Assessment	10 Marks
4	Internal Assessment	40 Marks
5	SEE	60 Marks
-	**Total**	**100 Marks**

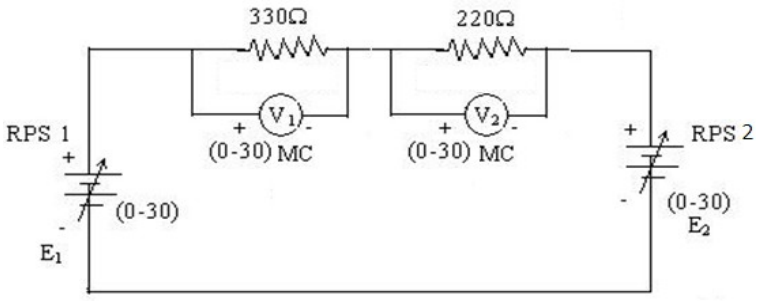
D. EXPERIMENTS

Experiment 01 : VERIFICATION OF KCL AND KVL FOR DC CIRCUITS.

-	**Experiment No.:**	1	**Marks**		**Date Planned**		**Date Conducted**	
1	Title	VERIFICATION OF KCL AND KVL FOR DC CIRCUITS						
2	Course Outcomes	Design the structure of C program						
3	Aim	VERIFICATION OF KCL AND KVL FOR DC CIRCUITS						
4	Material / Equipment Required	Lab Manual						

Sl.No.	Apparatus	Range	Quantity
1	RPS (regulated power supply)	(0-30V)	2
2	Resistance	330, 220 1k	6
3	Ammeter	(0-30mA)MC	3
4	Voltmeter	(0-30V)MC	3
5	Bread Board & Wires	--	Required

5	Theory, Formula, Principle, Concept	Basic knowledge.
6	Procedure, Program, Activity, Algorithm, Pseudo Code	Procedure for KCL: 1. Connections are made as per the circuit diagram. 2. Set a particular value in RPS. 3. Note down the corresponding ammeter reading. 4. Repeat the same for different voltages. Procedure for KVL: 1. Connections are made as per the circuit diagram. 2. Set a particular value in RPS. 3. Note all the voltage reading. Repeat the same for different voltages.
7	Block, Circuit, Model Diagram, Reaction Equation, Expected Graph	



8 Observation Table, Look-up Table, Output

Tabular Column for KCL

Voltage E	Current			Practical Value	Theoretical Value
	I_1	I_2	I_3	$I_1 = I_2 + I_3$	
Volts	mA	mA	mA	mA	mA
5					
10					
15					
20					
25					

Tabular column for KVL

Input Voltage		Voltage Drops		Practical Value	Theoretical Value
E_1	E_2	V_1	V_2	$E_1 - E_2 = V_1 + V_2$	
Volts	Volts	Volts	Volts	Volts	Volts
3	2				
5	4				
7	6				
10	8				
15	10				

9 Sample Calculations

1. $I_1 = I_2 + I_3$
2. $E_1 - E_2 = V_1 + V_2$

10 Graphs, Outputs

11 Results & Analysis: Thus Kirchoff's voltage law and Kirchoff's current law are verified theoretically as well as practically.

12 Application Areas: To analyze the circuits

13 Remarks

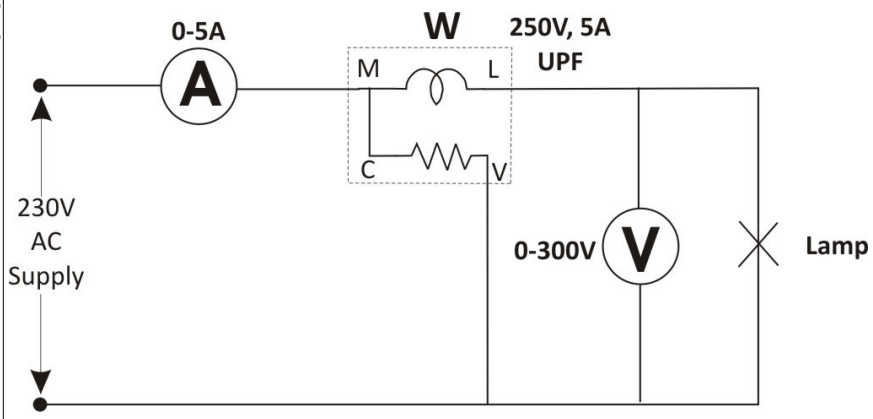
14 Faculty Signature with Date

Experiment 02 : MEASUREMENT OF CURRENT, POWER AND POWER FACTOR OF INCANDESCENT LAMP, FLUORESCENT LAMP AND LED LAMP

-	**Experiment No.:**	2	**Marks**		**Date Planned**		**Date Conducted**	

1	Title	MEASUREMENT OF CURRENT, POWER AND POWER FACTOR OF INCANDESCENT LAMP, FLUORESCENT LAMP AND LED LAMP
2	Course Outcomes	
3	Aim	Measurement of current, power and power factor of incandescent lamp, fluorescent lamp and LED lamp.
4	Material / Equipment Required	Lab Manual

Sl.No.	Apparatus	Range	Quantity
1	Ammeter	(0-5A)	1
2	Voltmeter	(0-300V)	1
3	Wattmeter	250V, 5A, UPF	1
4	Bread Board & Wires	--	Required
5	Incandescent lamp, fluorescent lamp and LED lamp		1 each

5	Theory, Formula, Principle, Concept	To identify the power consumption by different loads.
6	Procedure, Program, Activity, Algorithm, Pseudo Code	1. Make the connections as shown in the circuit diagram. 2. Connect an incandescent lamp & apply 230 V supply. 3. Take the readings of ammeter, voltmeter and wattmeter. 4. Ammeter reads the current consumed by lamp. 5. Wattmeter reads the power consumed by lamp. 6. Calculate power factor of lamp using the formula. 7. Repeat the same procedure for fluorescent lamp and LED lamp.
7	Block, Circuit, Model Diagram, Reaction Equation, Expected Graph	
8	Observation Table, Look-up Table, Output	**TABULATION:**

Types of loads	Voltage Applied a/c Lamp V volts	Current through the lamp I Amps	Power consumed by Lamp W watts	Power factor
Incandescent lamp				
Fluorescent lamp				
LED lamp				

9	Sample Calculations	

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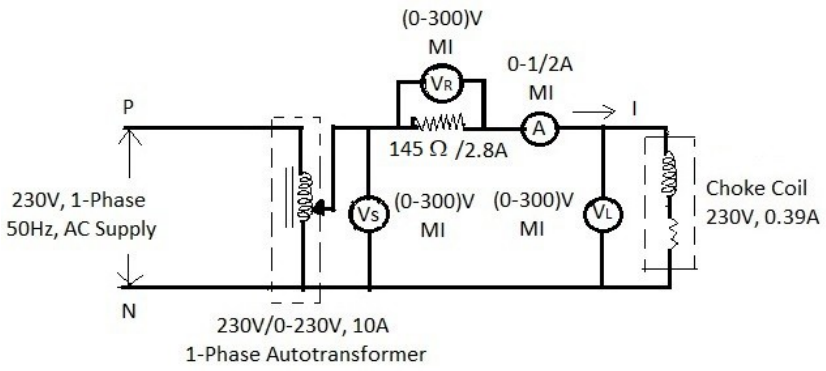
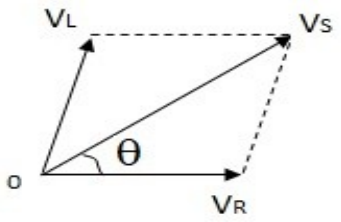
		$Power\ factor = \frac{Wattmeter\ Reading}{Voltmeter\ Reading \times Ammeter\ Reading}$
10	Graphs, Outputs	
11	Results & Analysis	
12	Application Areas	
13	Remarks	
14	Faculty Signature with Date	

Experiment 03 : MEASUREMENT OF RESISTANCE AND INDUCTANCE OF A CHOKE COIL USING 3-VOLTMETER METHOD

-	**Experiment No.:**	1	**Marks**		**Date Planned**		**Date Conducted**	
1	Title	Keywords and identifiers						
2	Course Outcomes	Design the logic for a given problem						
3	Aim	Exercise on Keywords and identifiers						
4	Material / Equipment Required	Lab Manual						
5	Theory, Formula, Principle, Concept	To identify the key words in c programming To identify the identifiers in c programming						
6	Procedure, Program, Activity, Algorithm, Pseudo Code	Step 1: start Step 2: read a,b Step 3: initialize the a,b Step 4: perform the operation in a,b Step 5: print the result step 6: stop						
7	Block, Circuit, Model Diagram, Reaction Equation, Expected Graph							
8	Observation Table, Look-up Table, Output							
9	Sample Calculations							

Sl.No	V_S (V)	V_R (V)	V_L (V)	I (A)
1				
2				

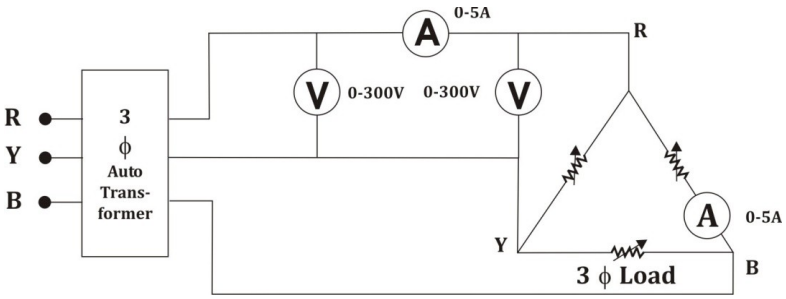
		Power factor, Cosθ = $\frac{V_{s^2}-V_{R^2}-V_{L^2}}{2V_R V_L}$ **Resistance of the coil, R =** $\frac{V_L \cos\theta}{I}$ **Ω** **Inductive reactance, X_L =** $\frac{V_L \sin\theta}{I}$ **Ω** **Inductance, L = $X_L/2\Pi f$** , Where f is the frequency of supply in Hertz = 50Hz
10	Graphs, Outputs	
11	Results & Analysis	
12	Application Areas	
13	Remarks	
14	Faculty Signature with Date	

Experiment 04 : DETERMINATION OF PHASE AND LINE QUANTITIES IN THREE PHASE STAR AND DELTA CONNECTION

-	**Experiment No.:**	1	**Marks**		**Date Planned**		**Date Conducted**	
1	Title	Keywords and identifiers						
2	Course Outcomes	Design the logic for a given problem						
3	Aim	To determine the phase and line quantities in three phase star and delta Connection.						
4	Material / Equipment Required	Lab Manual						

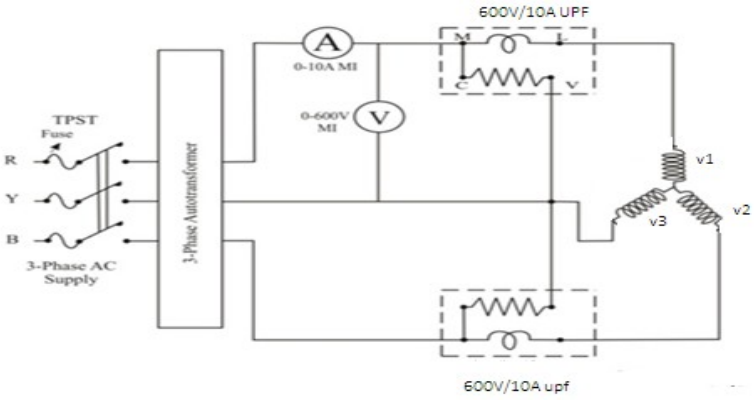
Sl.no	Particulars	Range	Quantity
1	Voltmeter	MI 0-600V	2Nos
2	Ammeter	MI 0-5A	2 Nos
3	3-φ Auto-transformer	415V/0-440V	1 No
4	Rheostat 50E/5A		3 Nos
5	Connecting wires	--	Few

5	Theory, Formula, Principle, Concept	To identify the key words in c programming To identify the identifiers in c programming
6	Procedure, Program, Activity, Algorithm, Pseudo Code	1. Connections are made as per the circuit diagram. 2. Keep the position of the auto transformer at zero. 3. Switch ON the supply. 4. Set the rheostat to fixed value. 5. Gradually vary the auto transformer in steps.

		6. Then note down the current and voltage readings. 7. Repeat the above procedure for delta connection. 8. Switch off the supply.
7	Block, Circuit, Model Diagram, Reaction Equation, Expected Graph	
8	Observation Table, Look-up Table, Output	Sl.No | V_1 in volt (line) | V_{ph} in volt (phase) | I in amps (line) | I in amps (phase) 1 2
9	Sample Calculations	
10	Graphs, Outputs	
11	Results & Analysis	
12	Application Areas	
13	Remarks	
14	Faculty Signature with Date	

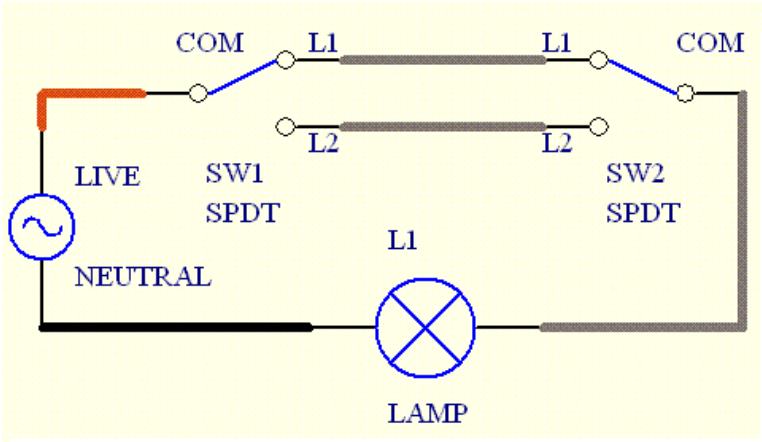
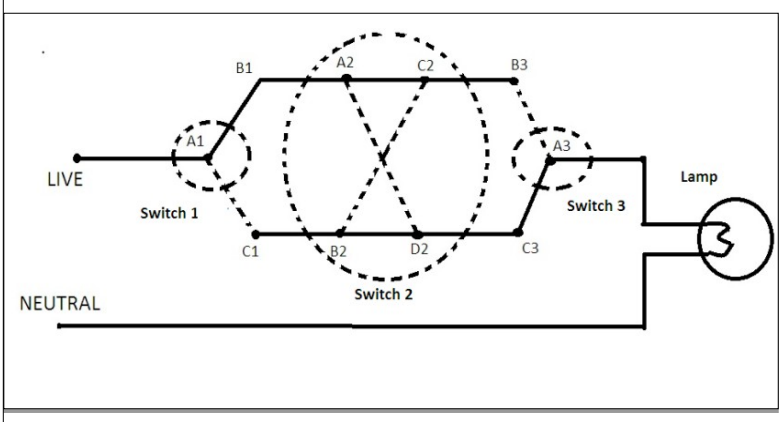
Experiment 05 : MEASUREMENT OF THREE PHASE POWER USING TWO WATTMETER METHOD

-	**Experiment No.:**	1	**Marks**		**Date Planned**		**Date Conducted**	
1	Title	Keywords and identifiers						
2	Course Outcomes	Design the logic for a given problem						
3	Aim	Measurement of three phase power by using two wattmeter method during balanced and Unbalanced load condition.						
4	Material / Equipment Required	Lab Manual 3 phase Autotransformer A.C Wattmeter A.C Voltmeter A.C ammeter Connecting wires						
5	Theory, Formula, Principle, Concept	Wattmeter Constant = k = (Set current x Set Voltage) / Full Scale Deflection						
6	Procedure,	1. Make the connections as per the circuit diagram						

	Program, Activity, Algorithm, Pseudo Code	2. Keep the three phase variac(autotransformer) at its zero position 3. Switch on the main supply and gradually increase the input voltage so that all the meters give readble deflection. 4. Note down the readings of all the meters.
7	Block, Circuit, Model Diagram, Reaction Equation, Expected Graph	
8	Observation Table, Look-up Table, Output	**TABULATION:** Sl.No | V in Volts | I in Amps | W1x k in Watts | W2 x k in Watts | P=W1+W2 in watts
9	Sample Calculations	
10	Graphs, Outputs	
11	Results & Analysis	
12	Application Areas	In searching and sorting concepts in data-structures and python
13	Remarks	
14	Faculty Signature with Date	

Experiment 06 : TWO WAY AND THREE WAY CONTROL OF LAMP

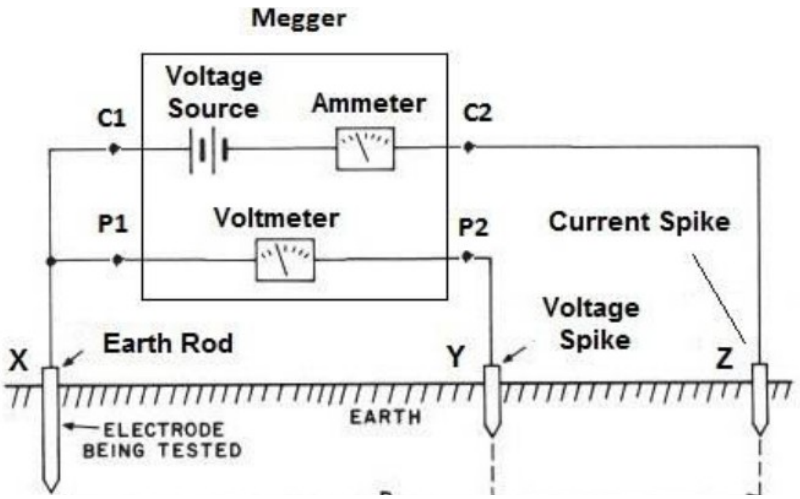
-	**Experiment No.:**	1	**Marks**		**Date Planned**		**Date Conducted**	
1	Title	TWO WAY AND THREE WAY CONTROL OF LAMP						
2	Course Outcomes							
3	Aim	To control one lamp by two 2-way switches and 3-way switches						
4	Material / Equipment Required	Lab Manual Kit Kat fuse: 5 Amps. Single pole switch: 5 Amps Lamp holders: 5 Amps Lamps: Round /Square wooden block: Square wooden block: Battens, Nails, Clips, CTS wire, Fuse wire.						

5	Theory, Formula, Principle, Concept	
6	Procedure, Program, Activity, Algorithm, Pseudo Code	**For Two Way Control of lamp** 1. Verify the circuit as per circuit diagram. 2. Switch on the supply. 3. Keep switch SW1 and SW2 in L1 position. 4. Note down the condition of the lamp. 5. Repeat the step 3 for different positions. Note down the condition of the lamp. **For Three Way Control of lamp** 1. Verify the circuit as per circuit diagram. 2. Switch on the supply. 3. Keep switches S1, S2 and S3 in as per the truth table. 4. Note down the condition of the lamp. 5. Repeat the step 3 for different positions. Note down the condition of the lamp.
7	Block, Circuit, Model Diagram, Reaction Equation, Expected Graph	 

8	Observation Table, Look-up Table, Output	for two way control: Switch position: SW1 / SW2 — Lamp condition L1 / L1 — ON L1 / L2 — OFF L2 / L1 — OFF L2 / L2 — ON TABULATION FOR 3-WAY CONTROL: Sl. No | Switch S1 A1 connected to | Switch S2 A2 Connected to | Switch S2 B2 Connected to | Switch S3 A3 connected to | Lamp Condition 1 | B1 | C2 | D2 | C3 | OFF 2 | C1 | C2 | D2 | C3 | ON 3 | C1 | D2 | C2 | C3 | OFF 4 | C1 | D2 | C2 | B3 | ON
9	Sample Calculations	
10	Graphs, Outputs	
11	Results & Analysis	
12	Application Areas	
13	Remarks	
14	Faculty Signature with Date	

Experiment 07 : MEASUREMENT OF EARTH RESISTANCE

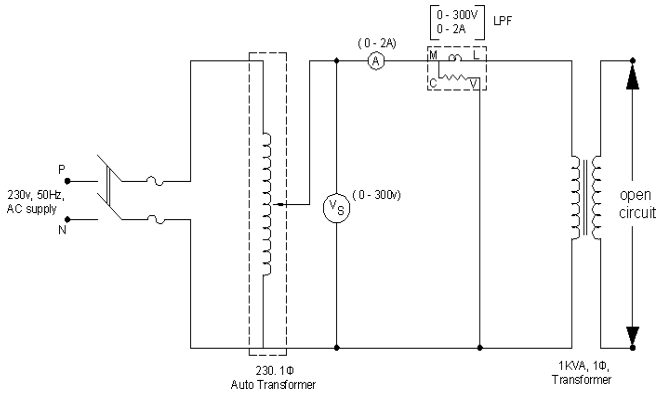
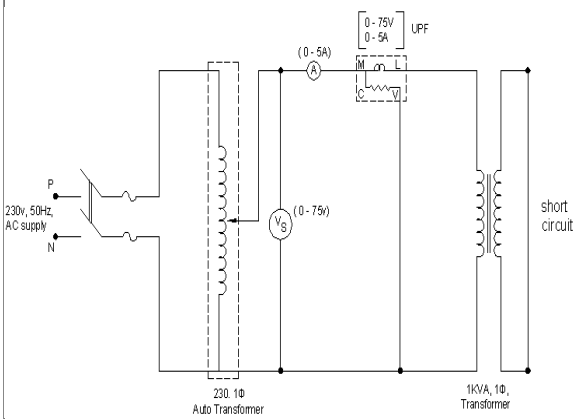
-	**Experiment No.:**	1	**Marks**		**Date Planned**		**Date Conducted**	
1	Title	MEASUREMENT OF EARTH RESISTANCE						
2	Course Outcomes							
3	Aim	To measure the resistance of the earth.						
4	Material / Equipment Required	Lab Manual Earth tester (Megger) — 1 Connecting wires — 5m Measuring Tape — 1						
5	Theory, Formula, Principle, Concept							
6	Procedure,							

	Program, Activity, Algorithm, Pseudo Code	1. Connect C1 and P1 terminals on the test set to the earth electrode as shown in circuit diagram. 2. Connect the terminal C2 to an electrode Z kept at 5m away from main electrode X and buried to a depth of 6 – 12 inches. 3. Connect the terminal P2 to an electrode Y which is kept midway between X & Z and buried to a depth of 6 – 12 inches. 4. Rotate the megger handle and record the resistance measurement. 5 .Note down the readings of measured resistance by changing the distance between electrodes.
7	Block, Circuit, Model Diagram, Reaction Equation, Expected Graph	
8	Observation Table, Look-up Table, Output	
9	Sample Calculations	
10	Graphs, Outputs	
11	Results & Analysis	To measure the resistance of the earth.
12	Application Areas	
13	Remarks	
14	Faculty Signature with Date	

Sl No	Distance in mtr	Resistance in Ω
1		
2		
3		
4		

Experiment 08 : STUDY OF EFFECT OF OPEN AND SHORT CIRCUITS IN SIMPLE CIRCUITS

-	**Experiment No.:**	1	**Marks**		**Date**		**Date**	

		Planned	Conducted
1	Title	Keywords and identifiers	
2	Course Outcomes	Design the logic for a given problem	
3	Aim	Exercise on Keywords and identifiers	
4	Material / Equipment Required	Lab Manual	
5	Theory, Formula, Principle, Concept	To identify the key words in c programming To identify the identifiers in c programming	
6	Procedure, Program, Activity, Algorithm, Pseudo Code	1) Make the connections as per the circuit diagram and make sure that autotransformer is at zero position. 2) Switch ON the supply. Now apply the rated voltage to the Primary winding by using variac. 3) The readings of the Voltmeter, ammeter and wattmeter are noted down in Tabular form. 4) Bring back the autotransformer to zero position and switch off the supply.	
7	Block, Circuit, Model Diagram, Reaction Equation, Expected Graph	 	

8	Observation Table, Look-up Table, Output	Sl.No.	V_{sc} Volts	I_{sc} Amps
		1		
9	Sample Calculations			
10	Graphs, Outputs			
11	Results & Analysis			
12	Application Areas			
13	Remarks			
14	Faculty Signature with Date			