

CERTIFICATE

*This is certify that Mr./Ms.*_____

of _____ *Class* _____ *Roll No.* _____

Exam Seat No. _____ *has successfully completed*

the term work in the subject of _____

as prescribed by University of Mumbai during the

year _____ *in the Department of* _____

ATTENDANCE

T/W TEST MARKS-

STAFF MEMBER IN CHARGE

HEAD OF DEPARTMENT

PRINCIPAL
(SEAL)

SR. NO.	EXPERIMENT NAME	Mapping CO	Mapping	Page No.	Date	Remark	Signature
			PO				
1	Verification of Kirchhoff's Laws (KCL and KVL)	1	1,2,4,9,12				
2	Verification of Superposition Theorem	1	1,2,4,9,12				
3	Verification of Thevenin's theorem	1	1,2,4,9,12				
4	Verification of Maximum Power Transfer theorem	1	1,2,4,9,12				
5	R-L Series circuit	2	1,2,4,9,12				
6	Measurement of 3-Φ Power by two wattmeter method	3	1,2,4,9,12				
7	Efficiency and Regulation of 1-Φ Transformer	4	1,2,4,9,12				
8	Study of DC machines	5	1,12				

Subject: Basic Electrical Engineering

Experiment No.

Name of Experiment:

Date of Performance:

Date of Submission:

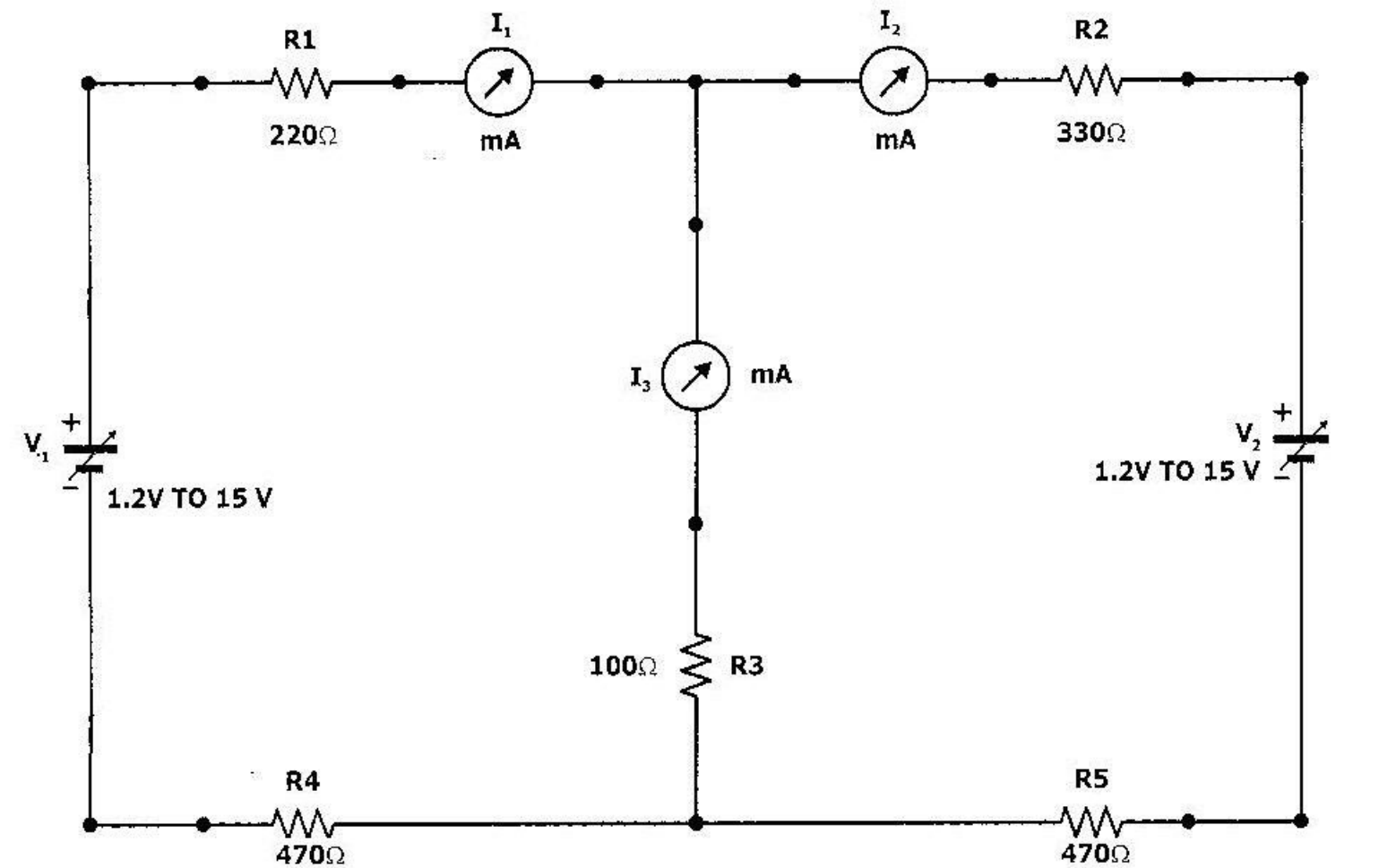
Grade/Marks:

Rubrics for Internal Evaluation:

Sr. No.	Rubrics	Weightage
1	Punctuality (2)	
2	Performance (4)	
3	Question/Answers (2)	
4	Journal Writing (2)	
Total		

Practical Incharge

CIRCUIT DIAGRAM:



V₁= _____ Volts V₂= _____ Volts

OBSERVATION TABLE :

V ₁ Active V ₂ Active V ₁ & V ₂ Active		
I ₁ ‘ =	I ₁ ‘’ =	I ₁ =
I ₂ ‘ =	I ₂ ‘’ =	I ₂ =
I ₃ ‘ =	I ₃ ‘’ =	I ₃ =

EXPERIMENT NUMBER 2

DATE:

NAME:

SUPERPOSITION THEOREM

AIM :

Verification of Superposition theorem

EQUIPMENTS / COMPONENTS: Trainer kit, patch cords, multi-meter

THEORY : -

SUPERPOSITION THEOREM:

In a linear network containing more than one active source (i.e. the voltage source and constant current source), the resultant current in any element is algebraic sum of the currents that would be produced by each source acting alone, all the other sources being represented by their respective internal resistances.

In simple words, the superposition principle states that *the voltage across (or current through) an element in a linear circuit is the algebraic sum of the voltages across (or currents through) that element due to each independent source acting alone.*

The constant voltage sources are represented by their internal resistance if given or simply zero resistance i.e. short circuits if internal resistances are not mentioned.

The constant current sources are represented by infinite resistance i.e. open circuits.

CALCULATIONS

THEORETICAL VERIFICATION

PROCEDURE:

- 1. Connect the trainer kit to mains supply & switch it ON
- 2. Make V1 supply to 5 Volts & V2 supply to 10 Volts, by connecting voltmeter across it.
- 3. Connect both supply to the network (as shown in Fig. 1) & measure the current

one by one using ammeter & short circuit other two

- 1. Measure the current flowing through all three branches I1, I2, I3
- 2. Now short circuit the V2 supply & Connect V1 only (as shown in Fig. 2) & measure current flowing through all three branches I1’, I2’, I3’
- 3. Now short circuit the V1 supply & Connect V2 only (as shown in Fig. 3) & measure current flowing through all three branches I1’’, I2’’, I3’’
- 4. And verify the theorem: I1 = I1’ + I1’’

I2 = I2’ + I2’’ I3 = I3’ + I3’’

- 1. Repeat the experiment by changing the V1& V2 Values & also reversing the polarity of one of the voltage source

THEORETICAL VERIFICATION (Contd.)

V ₁ Active			V ₂ Active			V ₁ & V ₂ Active		
Measure	Value	Calculated	Measure	Value	Calculated	Measure	Value	Calculated
I ₁ ‘ =			I ₁ ‘’ =			I ₁ =		
I ₂ ‘ =			I ₂ ‘’ =			I ₂ =		
I ₃ ‘ =			I ₃ ‘’ =			I ₃ =		

RESULTS:

CONCLUSION: