Basic Electrical and Electronics Engineering Lab (BEEE102P)

EXPERIMENT 6

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Experiment No 6.

VERIFICATION OF KCL and KVL

BEEE102P
Basic Electrical and Electronics Engineering Lab
List of Experiments

Cycle-1 Software Experiments

S.No	Experiment Title
1	Verification of Mesh current analysis and node voltage analysis using ORCAD/Capture CIS
2	Verification of Thevenin's theorem using ORCAD/Capture CIS
3	Verification of Maximum power transfer theorem using ORCAD/Capture CIS
4	Verification of Resonance phenomenon in a series RLC circuit using ORCAD/Capture CIS using AC Parametric Sweep Analysis
5	Design of single-phase half-wave and full wave rectifier

Cycle-II Hardware Experiments

6	Verification of Kirchhoff’s current law/ Thevenins theorem
7	Wiring circuit for Single lamp and Fan with regulator/ Staircase wiring circuit layout of multi storage building
8	Design of half adder circuit using logic gates
9	Measurement of energy using single phase energy meter
10	Design of regulated power supply using Zener diode

Theory:

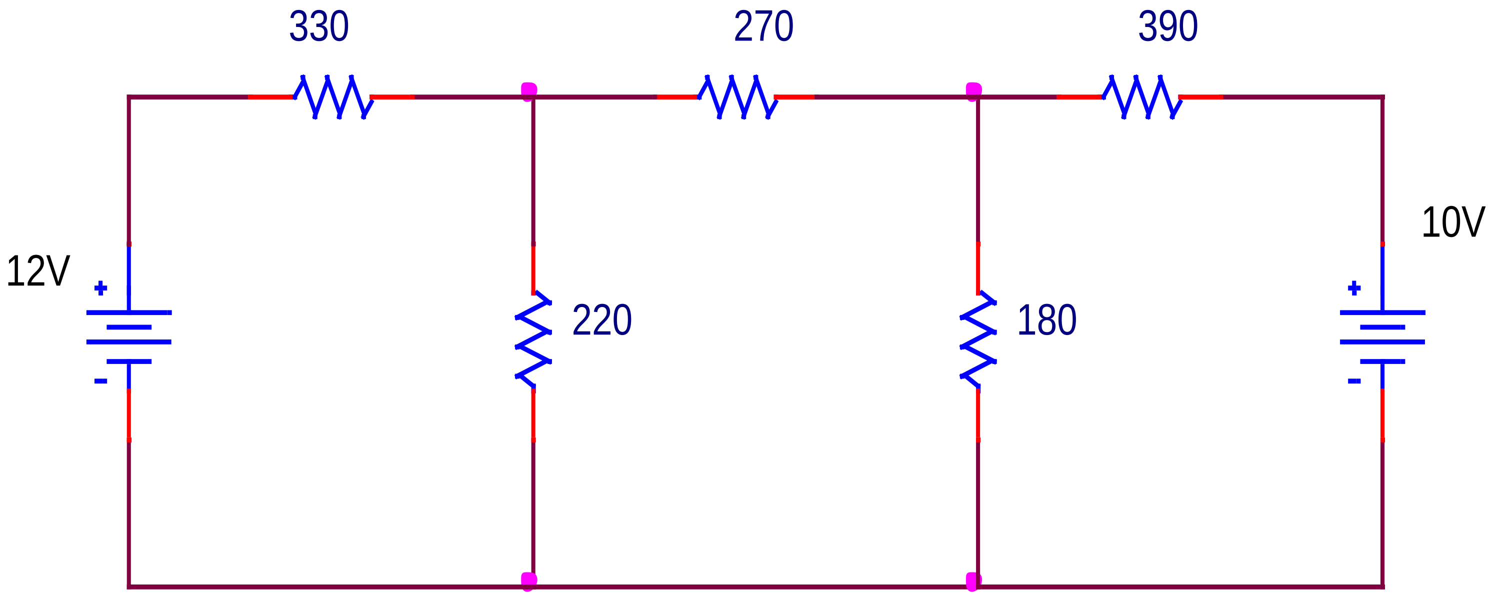
➢ Kirchhoff's Voltage Law – Mesh analysis

- It states that in a closed circuit, the algebraic sum of all source voltages must be equal to the algebraic sum of all the voltage drops.
- Voltage drop is encountered when current flows in an element (resistance or load) from the higher-potential terminal toward the lower potential terminal.
- Voltage rise is encountered when current flows in an element (voltage source) from lower potential terminal (or negative terminal of voltage source) toward the higher potential terminal (or positive terminal of voltage source).

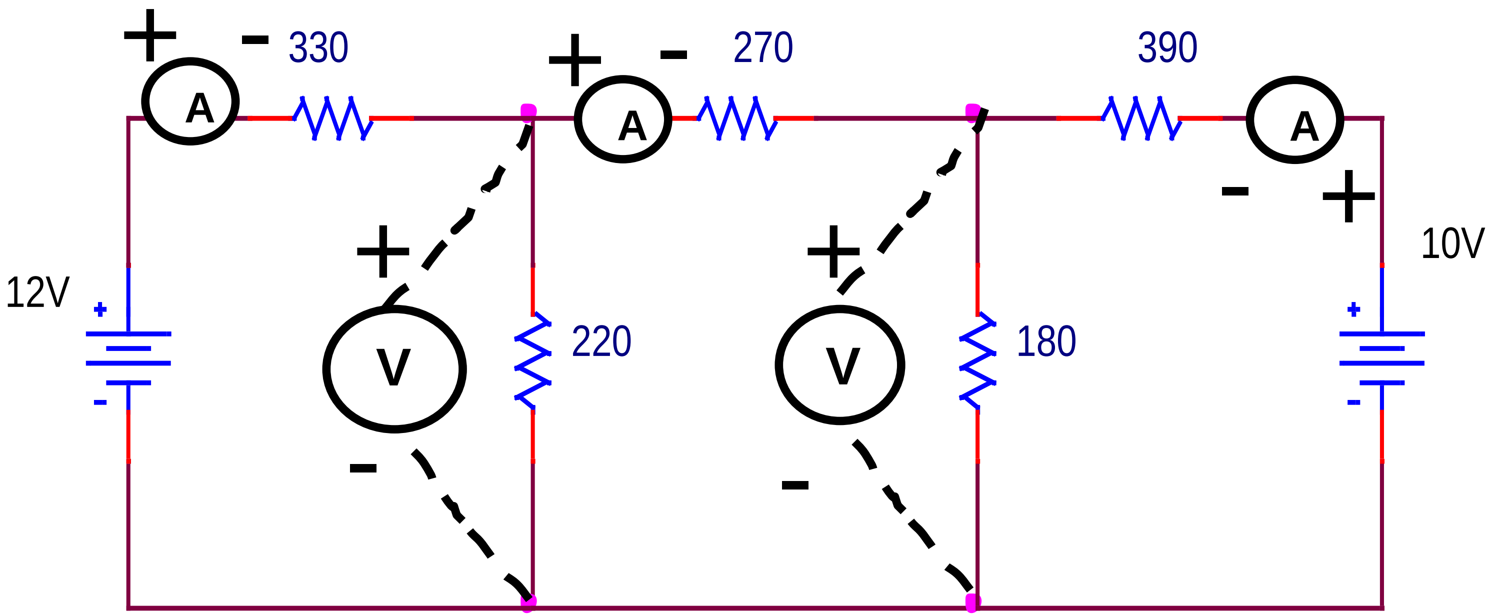
Apparatus/Tool required:

Sl. No.	Components Name	Range	Quantity
1	Resister	330Ω, 270Ω, 390Ω, 220Ω, 180Ω	Each 1 No.
2	Ammeter	0-50mA (DC)	1 No.
3	Voltmeter	0-30V (DC)	1 No.
4	RPS	0-32 V (DC)	1 No.
5	Connecting Wires	-	Few
6	**Bread Board**	-	1 No.

Circuit Diagram:



Circuit Hardware



Manual Calculations: