CHITTAGONG UNIVERSITY OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING
CHITTAGONG-4349, BANGLADESH.

Course No. EEE-182

Course Title: Basic Electrical Engineering Sessional

Experiment No. 11

TO MEASURE THE CURRENT, VOLTAGE AND TOTAL POWER CONSUMPTION AND TO DRAW THE VECTOR DIAGRAM OF RLC SERIES & PARALLEL CIRCUITS.

PRELAB WORK:

- **Read this laboratory manual carefully before coming to the laboratory class, so that you know what is required.**
- Try to **follow** the lecture notes of **EEE 111.**
- **DONOT** copy others blindly!!!
- **Submit your lab report before the roll call.**

OBJECTIVE:

The objectives of the experiment are –

1. To measure current.
2. To measure voltage.
3. To measure power consumption.
4. To draw the vector diagram of RLC series and RLC parallel Circuit.

APPARATUS:

1. Three Ammeters.
2. Three Voltmeters.
3. Resistance with different values.
4. Inductances.
5. Capacitors.
6. AC Source.

CIRCUIT DIAGRAM:

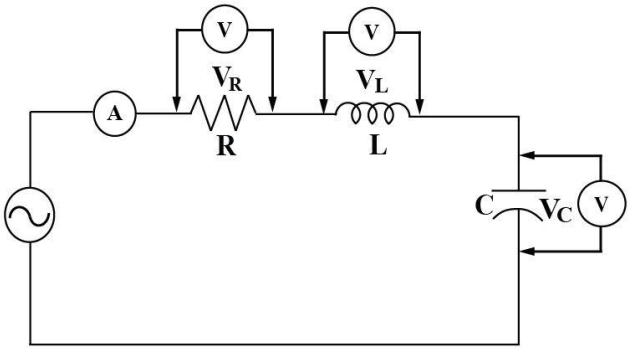

Figure 1: RLC Series circuit.

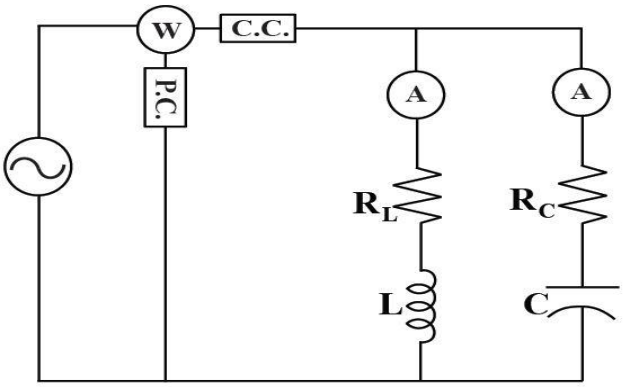

Figure 2: RLC Parallel circuit.

PROCEDURE:

For RLC Series circuit

1. Connect the circuit as shown above.
2. Take ammeter and voltmeter readings *(**I, V, V_R, V_L** and **V_C**).*
3. Take also wattmeter reading ***P***.
4. Draw the vector diagram taking ***I*** as reference vector.
5. Find the power factor.

For RLC Parallel circuit

1. Connect the circuit as shown above.
2. Take meter readings of ***V, I_1, I_2*** *and* ***P.*** Also take the readings of ***V_{R1}, V_{R2}, V_C*** *and* ***V_L.***
3. Draw the vector diagram taking as reference vector.
4. Find the power factor ***$\cos\theta$, $\cos\theta_1$, $\cos\theta_2$***.
5. Calculate ***P_1*** *and* ***P_2***.
6.

EXPERIMENTAL DATA:

For RLC Series circuit

No. of obs.	I amps	V volts	V_R volts	V_L volts	V_C volts	cosθ	P watts

For RLC Parallel circuit

Nos. of Obs.	V_{R1} volts	V_L volts	V_{R2} volts	V_C volts	V volts	I_1 amps	I_2 amps	I amps	$\cos\theta_1$	$\cos\theta_2$	cosθ	P_1 watts	P_2 watts	P watts

REPORT:

1. Measure the current, voltage and power in RLC series and parallel circuits.
2. Also measure the power factor for two circuits.
3. Draw the vector diagrams for series and parallel circuit.

CAUTION:

1. Do not switch on the supply until the circuit has been checked by your teacher.
2. Take care of the apparatus.
3. Do not touch any open ended wire or cable with applying voltage supply at the other end.