

NETWORKS LAB (EE 351)
Experiment no 3(b)
Frequency response of RLC circuits

OBJECTIVE:

To study the variation of current and capacitor voltage with change in frequency for RLC series circuit.

EQUIPMENT:

Variable frequency signal generator, resistor, inductor, capacitor, ammeter and voltmeter.

CIRCUIT DIAGRAM:

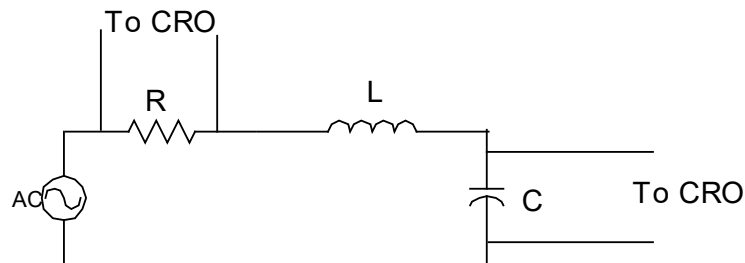
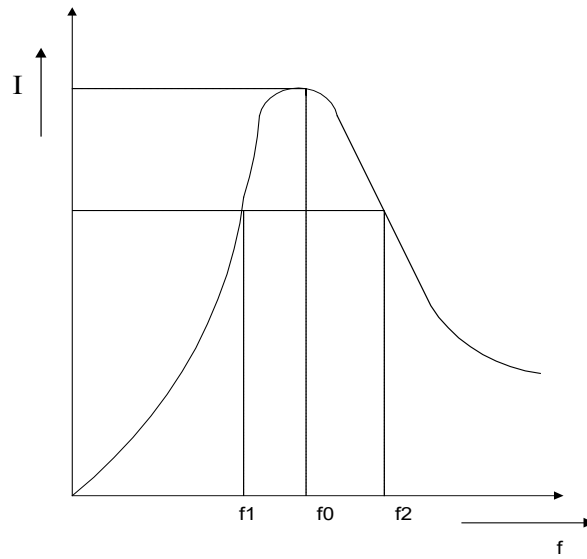


Fig. A Circuit diagram for series RLC circuit

PROCEDURE:

1. Connect the circuit as shown in figure. A.
2. By varying the frequency, tabulate the value of voltage across resistor and capacitor.
3. Get the current in circuit by dividing resistor voltage V_r by resistance.
4. Plot the graph between frequency and capacitor voltage.
5. Calculate the value of different parameters listed and verify them with measured ones.

MODEL GRAPH:



$$B.W = f_2 - f_1$$

$$Q = \frac{W_0 L}{R} / (W_0 RC)$$

TABULATED FORM:

Frequency	Resistance	Inductance	Capacitance	Capacitor voltage	Resistor voltage	V_r/R