



Electric Circuit Analysis

Practical

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Lecture 3

EXP.NO.3: PARALLEL CONNECTION OF RL

1-PURPOSE:

To study the effect of parallel connection of R&L on the current and voltage and the phase angle between them.

2- THEORY:

In case of parallel connection of R&L, the total current will divide between inductor which its value is (X_L) and resistor R. The voltage of both inductor and resistor will equal to the voltage of the source.

$$V_S = V_L = V_R$$

The current pass through the resistor will be in the same phase with voltage of resistor, but the current pass through the coil will delayed by 90° from the voltage of the coil.

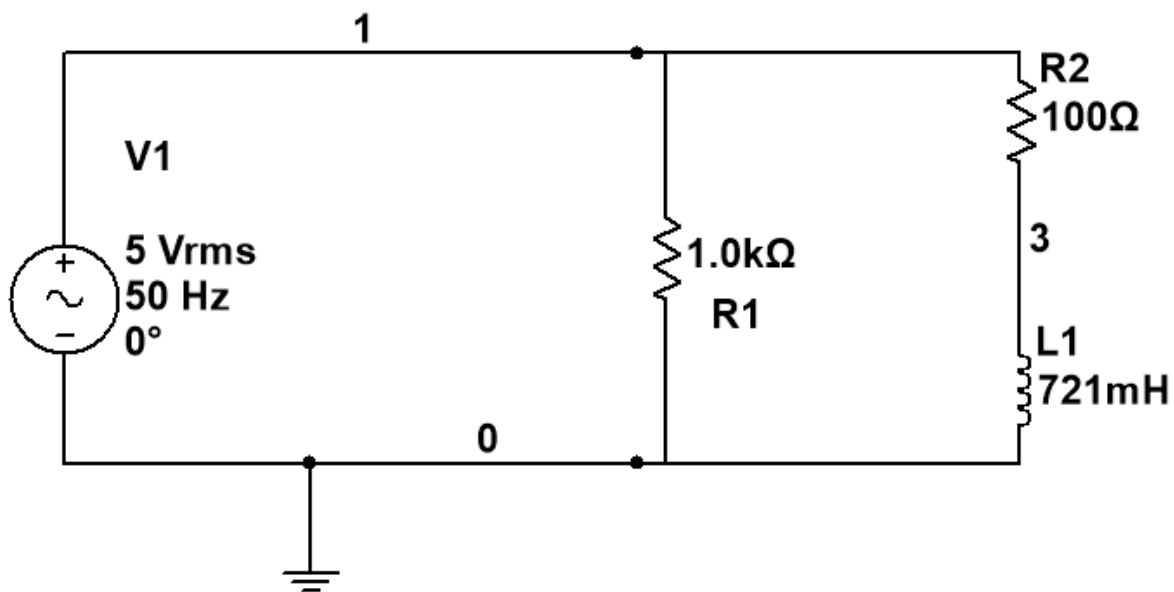


Figure. (1)

3- PROCEDURE:

1-Connect the circuit in figure (1).

2-Set the voltage of input at 5V P.P.

3-Change the frequency of the source for each step with constant input voltage 5V.

4-Find the current pass the coil:

a- directly

b- Reading the voltage difference across the resistor i.e

F(V)	V(R1)	IL	XL

4-DISCUSSION

1-Find the value of Z for each frequency.

2-Find the value of phase angle ϕ

F(HZ)	Z	φ

3-Draw the relation between IL and frequency using semi-log paper.

4- What is the effect of the increment of the frequency on the total current?