Republic of Iraq
Ministry Of High Education and
Scientific Research

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Techniques

Electric Circuit Analysis

Practical

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ASSIST LEACTURE
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EXP NO. 1

EX NO 1: R L Series Circuit

This experiment is to study the shape of current and voltage and the phase different between them in R L series connection and study this value

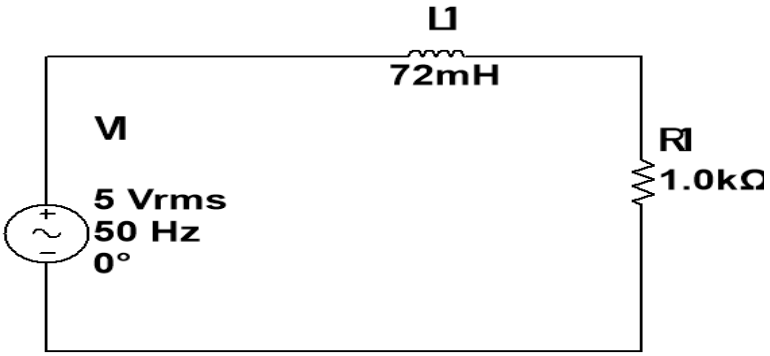
2- theory

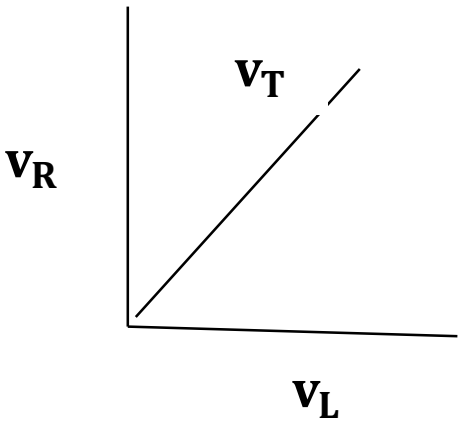
The ideal coil make delay between current and voltage in phase of π/2 and the resistance make the current and voltage in the same phase .

In the circuit that connection non ideal coil (i.e have resistance) the delay of current w.r.t voltage will be in phase phase, which value depend on capacitor of xe for the capacitor and its resistance, and with calculated of this shape which is equal to:

$$\tan\varphi = \frac{V_L}{V_R}$$

$$\varphi = tan^{-1}\frac{L}{R}$$





XL= 2 **π F L**

Procedure

1- Connection the circuit in the figure 2
2- Set the value of input voltage as5 v p.p
3- Measure the voltage across resistance and inductor with the varying the frequency as shown in table below
4- Find the value XL

F(HZ)	XL	VL	Z	VR	φ

4 – DISCUSSION

1- Draw the relation between f and v for the VR and VL By using semi-log paper
2- Draw the relation between