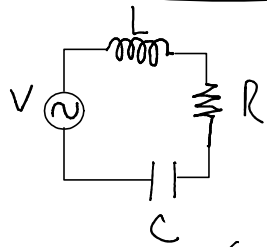


Lab 6 - Board Notes - RLC Circuit

Tuesday, May 27, 2014 12:03 PM

LAB 6 - LRC CIRCUITS

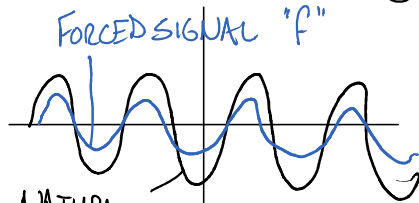


LINEAR FREQ } ANGULAR FREQ
 $f = \frac{1}{T}$ } $\omega = 2\pi f$
 WHERE T IN SECONDS
 THEORY RES. FREQ: $\omega_{RES} = \frac{1}{\sqrt{LC}}$

IMPEDANCE $V=IR \Rightarrow V=IZ$

WHERE $Z = \sqrt{(X_L - X_C)^2 + R^2}$

- INDUCTIVE REACTANCE $X_L = \omega L$
- CAPACITIVE REACTANCE $X_C = \frac{1}{\omega C}$



AT RESONANCE:
 WHEN $X_L = X_C \rightarrow Z = R$
 NOTE: NOT ALWAYS THE CASE

EXPERIMENT:

POWER AMP. 2.97V
 SINEWAVE @ 10Hz

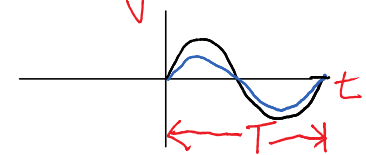
SCOPE: OUTPUT VOLTAGE
 VS. VOLTAGE SENSOR
 (5000Hz)

IRON CORE INSIDE
 INDUCTOR

NOTE: VOLTAGE SENSOR
 AROUND RESISTOR
 NOT INDUCTOR

REPORT

- COVERSHEET
- QUESTIONS
- TABLES
- PLOT
- CURRENT ($\frac{V_R}{R}$) VS. LINEAR FREQ (F)
- V_R VS LINEAR FREQ
- VOLTAGE VS TIME AT RESONANCE
- 1 PERIOD



VALUES FROM DATA TABLE