

DAILY ASSESSMENT FORMAT

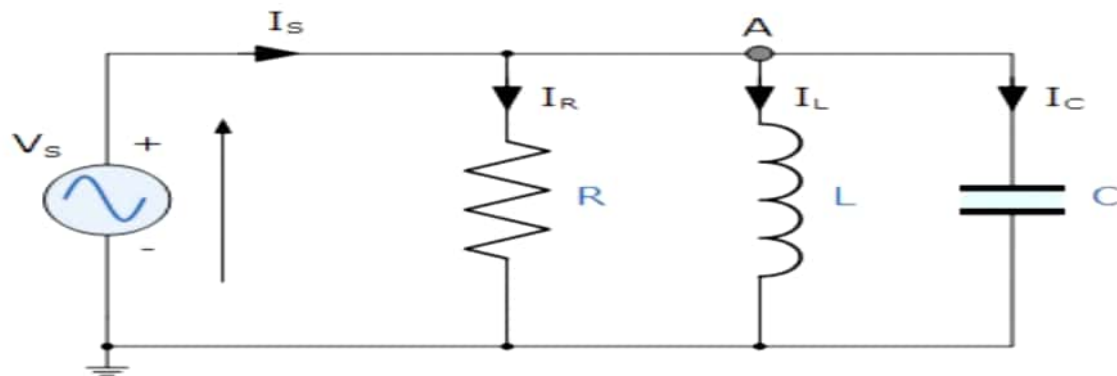
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Course:	Network theory	USN:	4a18ec040
Topic:	Open source circuit stimulation	Semester & Section:	4th sem A section
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FORENOON SESSION DETAILS

Image of session



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Parallel RLC Circuit Analysis

The **Parallel RLC Circuit** is the exact opposite to the series circuit we looked at in the previous tutorial although some of the previous concepts and equations still apply.



However, the analysis of a *parallel RLC circuits* can be a little more mathematically difficult than for series RLC circuits so in this tutorial about parallel RLC circuits only pure components are assumed in this tutorial to keep things simple.

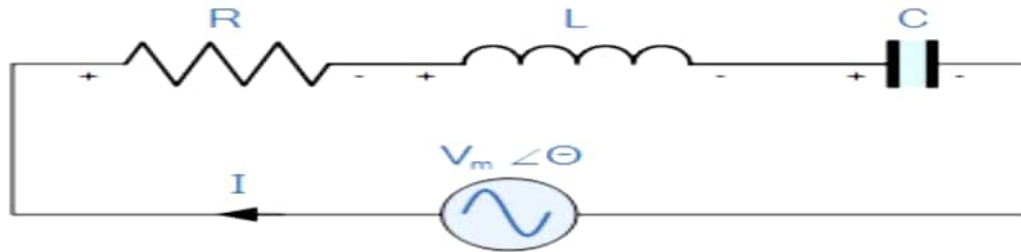
This time instead of the current being common to the





circuit below.

Series RLC Circuit



Firstly, let us define what we already know about series RLC circuits.

- **Inductive reactance** : $X_L = 2\pi f L = \omega L$
- **Capacitive reactance** : $X_C = \frac{1}{2\pi f C} = \frac{1}{\omega C}$
- **When $X_L > X_C$ the circuit is Inductive**
- **When $X_C > X_L$ the circuit is Capacitive**
- **Total circuit reactance** = $X_T = X_L - X_C$ or $X_C - X_L$
- **Total circuit impedance** = $Z = \sqrt{R^2 + X_T^2} = R + jX$

From the above equation for inductive reactance, if either the **Frequency** or the **Inductance** is increased the overall inductive reactance value of the inductor would also increase. As the frequency approaches infinity the inductors reactance would also increase



Report – Report can be typed or hand written for up to two pages.



Today's topic I have studied about

Online Open source circuit simulation

****Series RLC**

Resonance occurs when voltage across inductor and capacitors are equal and opposite

****Parallel RLC**

Inductive reactance is proportional to frequency

Circuit current is sum of resistive current capacitor current and inductor current

****RL and RC series circuit**

Frequency response

****Make interference of the response of the circuit for the**

Change in Frequency

Change in RLC Parameter valued



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