Problem statement of experiment 2

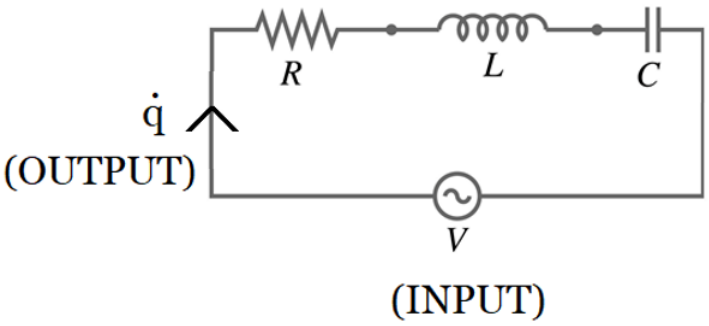
May 26, 2020

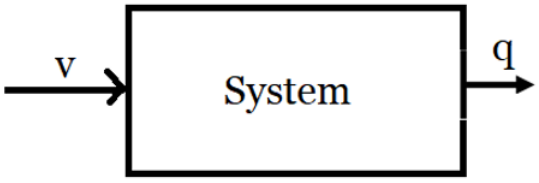
Motive:To analyse the stability, behaviour and time domain characteristic of the system using the concept of transfer function by taking the example of RLC circuit.

RLC circuit

In this experiment we need to complete the tasks given below

1. Derive the differential equation of RLC circuit.
2. Derive the transfer function of RLC circuit.
3. Plot the Poles and Zeroes of RLC circuit in Scilab
4. Study about time domain characteristics for unit-step inputs using x-cos.
5. Compare Spring mass damper system and RLC circuit and observe how we can relate both by force-voltage analogy.





Topics you will learn:

- Concepts of transfer function
- Finding poles and zeros.
- Model the system in Scilab using Xcos for time domain characteristics.
- Plot poles and zeros in complex s-plane representation to check the stability of the system.

- Observe the system behaviour for unit-step and impulse inputs in time domain.
- Scilab and Xcos for graphical repersentation.
- Voltage-Force analogy