

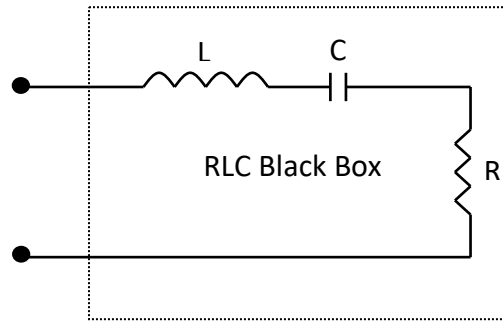
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Student Name:

ENSC 220 Lab Test #2

Black Box Code #

Bench #

Objective: Find **R**, **L** and **C** values inside the black-box.**Method:**

1. Record the code of your black box (above).
2. Record the value of the external resistor you are using for the experiment.
3. Apply a sinusoidal signal input to the circuit.
4. Determine the resonant frequency F_0 and also record the V_{in} and V_{out} @ F_0 .
5. Determine the lower cutoff frequency F_L and upper cutoff frequency F_H and record.
6. Compute the bandwidth
7. Calculate the R , L , C and present it in the units indicated.

F_0	V_{in}	V_{out}
Hz	V	V

F_L	F_H	R_{EXT}
Hz	Hz	Ω

Black box R	Black box L	Black box C
Ω	μH	pF

$$\omega_0 = \frac{1}{\sqrt{LC}} \quad \omega_H - \omega_L = \beta = \frac{R}{L} \text{ (Bandwidth)}$$

Record any and all calculations on the back of this page

Remember $\omega = 2\pi f$

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