

**ALL PRE-LAB ANSWERS MUST BE SUBMITTED THROUGH CANVAS BEFORE
SUNDAY, OCTOBER 29, 11:59 PM
CANDIDATES WITH NO SUBMISSION WILL NOT EARN ANY MARKS FOR LAB 3**

Pre-Lab Assignment 3: Passive Filters

Please note that only the numerical values to the answers for the following questions are required for submission on Canvas. Pay attention to the units specified by each question. There is no need to include the unit in your answer submitted on Canvas.

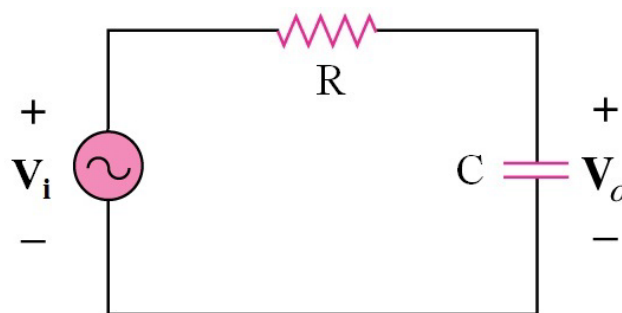


Fig 1: Circuit for questions 1 to 3

Referring to the circuit shown in Fig 1, where $R = 3 \text{ k}\Omega$ and $C = 6.8 \text{ nF}$:

1. Derive the frequency response of V_o/V_i .
2. Calculate the cut off frequency (f_c) in Hz.
3. State if the circuit represents a low or high pass filter

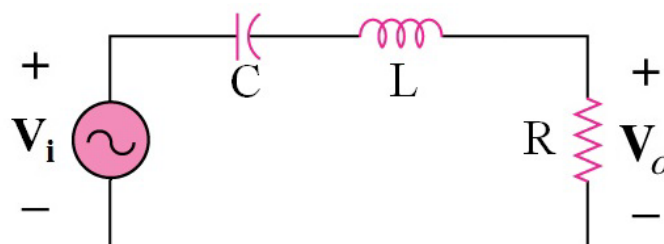


Fig 2: Circuit for questions 4 to 5

Referring to the circuit shown in Fig 2, where $R = 300\Omega$, $L = 10\text{mH}$ and $C = 6.8\text{nF}$:

4. Derive the frequency response of V_o/V_i .
5. Calculate the resonant frequency (f_0) in Hz.