

## **Submission**

**Lab activity: Implementation of Designed filter for selected application.**

**Group Name:** NONE                      Circuit Theory

**Class and Div: SY BTECH (E&TC)**

Div and Batch: B(3)

**Group members' names along with PRN:**

Vaibhav Pawankar (202201070124)

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**Name of the Application selected:** Electroencephalography(EEG)

**Type of the Filter to be designed:**

Low Pass Constant K (PI) Filter.

**Cut-off Frequency of the Filter:**

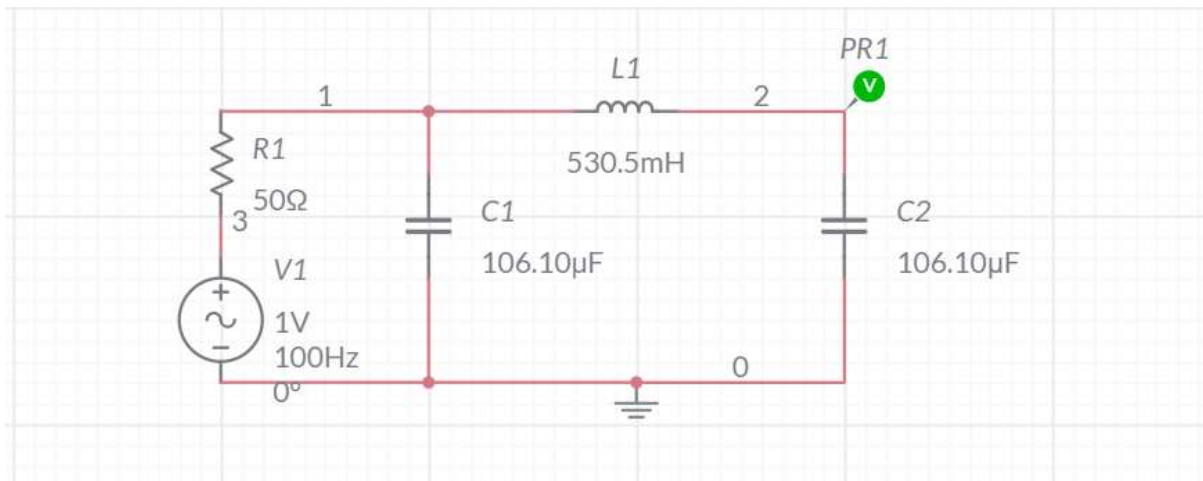
30 Hz

## A) Simulation Output:

1. Simulate the theoretically designed filter (For the application selected in previous activity) on MULTISIM / Tinkercad or any other software tool where you can get its frequency response. Find the Cut-off frequency from simulated frequency response.

(Circuit simulation - 2M, Freq. Response-2M, simulated cut-off frequency-1M)

- Snapshot of Simulated Circuit:



- Frequency Response of the simulated filter: (Gain vs Frequency)



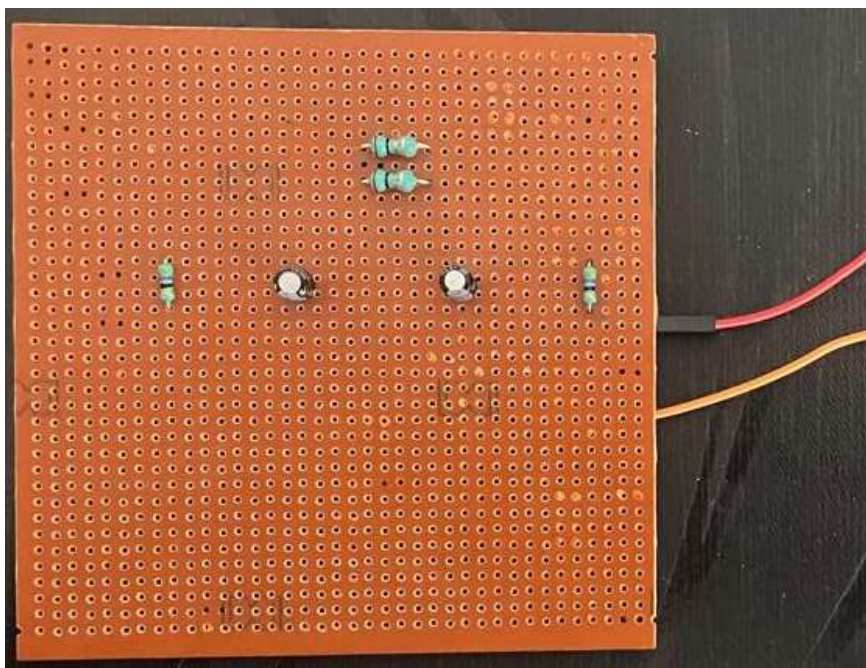
Value of Simulated Cut-off frequency: .....

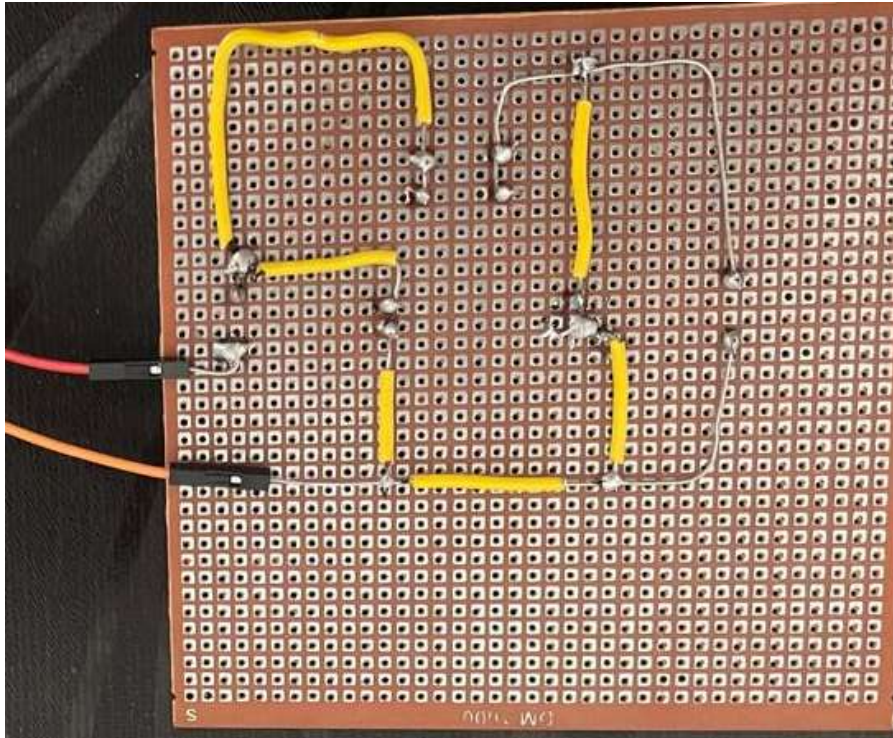
## B) Practical Output:

2. Implement the theoretically designed and simulated filter on Zero PCB and take readings of  $V_o$  (output voltage) vs frequency in the lab. Plot graph. Find the practical Cut-off frequency from the graph.

(Implementation of ZERO PCB - 2M, Readings - 2M, Freq Response graph - 2M, Practical Cut-off frequency - 1M)

- Snapshot of PCB Circuit of Practical filter:





- **Frequency Response of the Practical filter: (Frequency vs Gain)**

**(Mark the cut-off frequency of the Practical filter on frequency response.)**

**Value of Practical Cut-off frequency: .....**

### Observation Table:

[illegible]


**C. Compare the theoretical, Simulated and practical Cut-off frequency. (2M)**

Cut-off frequency		
Theoretical	Simulated	Practical

**D. Conclusion: Conclude based on your observation and mention the reason of variation. (1M)**