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**MATRIC NUMBER : 17/ ENG04/027**

**DEPARTMENT : ELECTRICAL AND ELECTRONICS ENGINEERING**

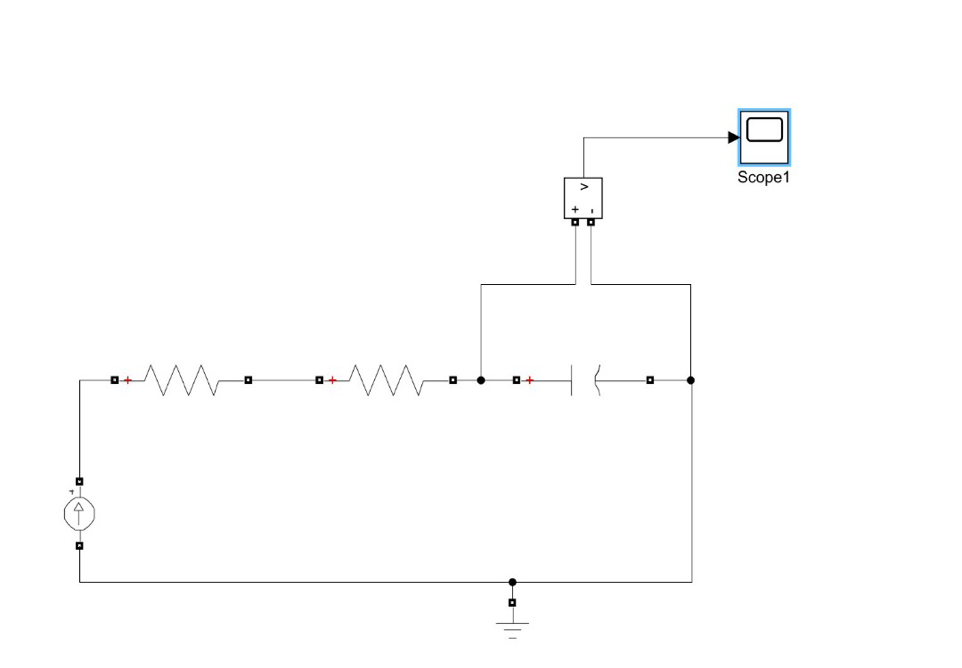
**COURSE : SOFT WARE DEVELOPMENT AND APPLICATION ( EEE 342)**

**Class work**

**QUESTION A**

* **Noise suppression**: They are used in communication systems for noise removal from the received signals.
* **Radio communications** : in communication, Filters enable radio receivers to only "see" the desired signal while rejecting all other signals (assuming that the other signals have different frequency content).
* **DC power supplies:** Filters are used to eliminate undesired high frequencies (i.e., noise) that are present on AC input lines. Additionally, filters are used on a power supply's output to reduce ripple.
* **Audio electronics**: A crossover network is a network of filters used to channel low-frequency audio to woofers, mid-range frequencies to midrange speakers, and high-frequency sounds to tweeters
* **Analog-to-digital conversion:** Filters are placed in front of an ADC input to minimize aliasing.

**QUESTION B**

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**QUESTION C**

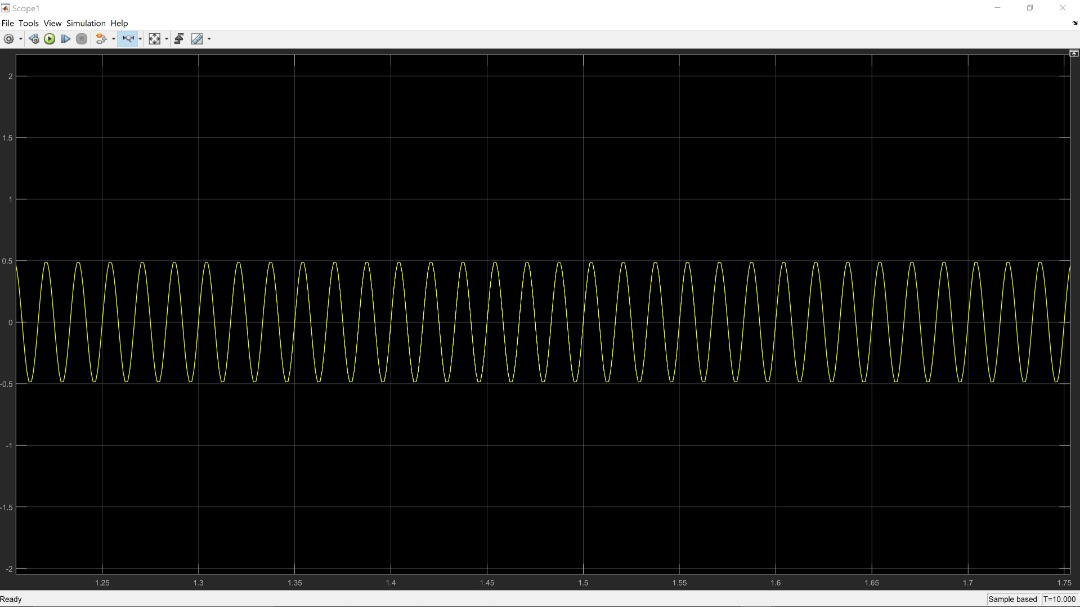
Given that : R = 0.005 ohms , C =0.01F

Using : 1/ (2\* pi\* R\*C) Recall: pi = 3.1415

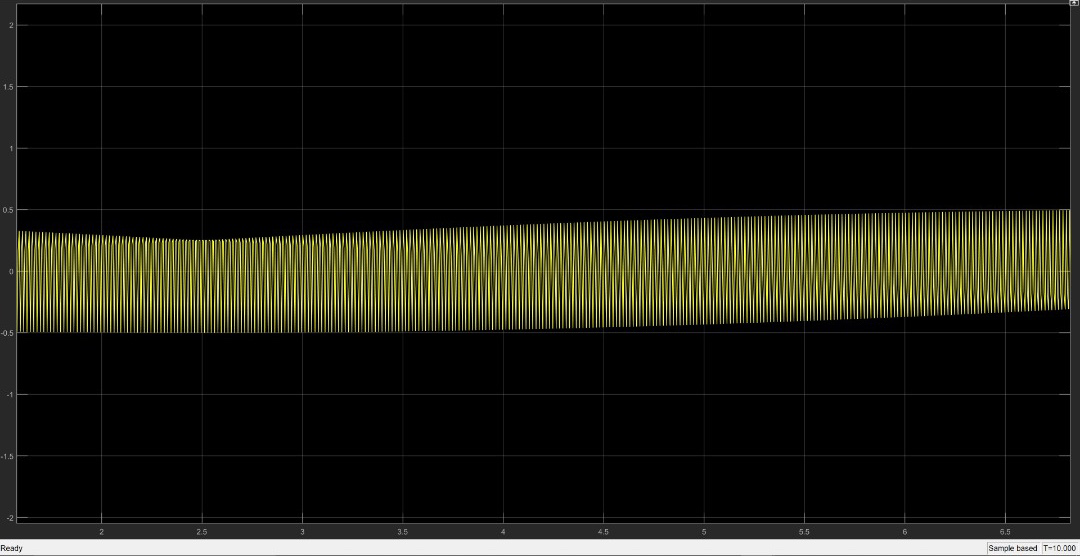
Hence Wc = 1/(2\*3.1415\*0.005\*0.01)

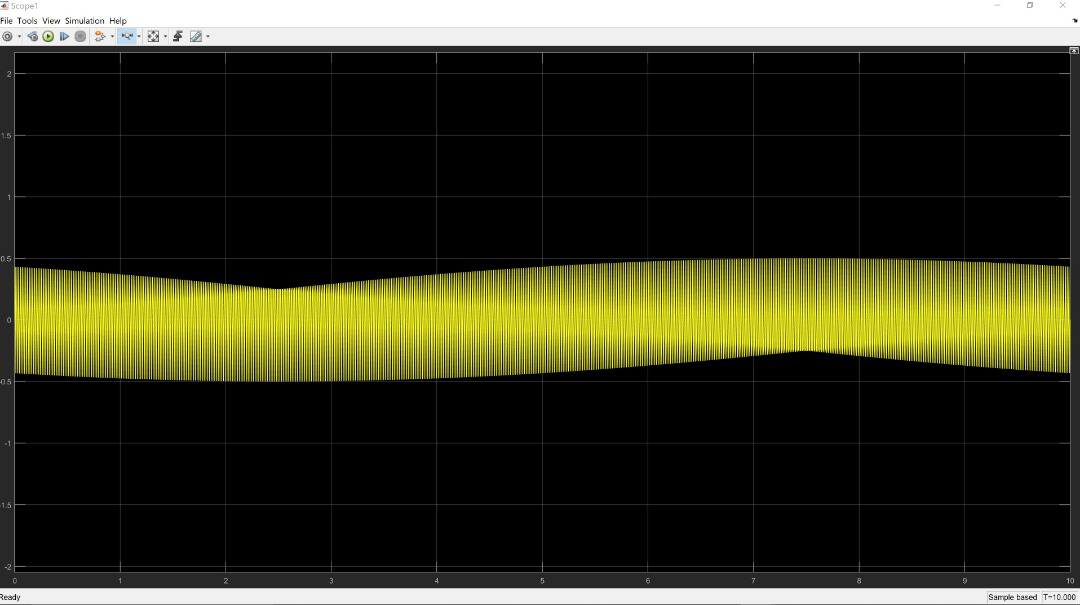
Wc = 3183.098 Hz

**QUESTION D**

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**QUESTION E**

**i**

**ii**

**Observation :**

1. It was observed in figure i, the waveform tends to be constant at 0.5 voltage within the time of 6 to 6.6 seconds and the waveform tends to be constants at -0.5 within the time of 0 to 3.5 seconds

ii. The peak of the sign wave is at its lowest at time = 2.5 seconds In figure I ( signal of 5k ohms )

iii. In figure ii, the peak is at its lowest at time = 25 and the negative peak is at its highest at time = 7.5