**Questions 10marks**

Filters are important components in electronics system as seen in communication devices, speech and signal processing.

1. Discuss the benefits of filters in engineering system.
2. Design a low pass filter of 0.005Ω and 0.01F using **building blocks only**; you are free to determine your amplitude value.
3. Determine the cut-off frequency
4. Simulate the design and show the output using a display unit
5. If two signals of 5 KΩ and 2 KΩ are pass through the filter at different intervals. Discuss your observation(s).

Deliverables:

**PDF** report of the solutions showing in details the step by step of your design, results and observations

Deadline: 11.59pm (7th May, 2020)