| C۱ | analc | and | Networks | 2020 |
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Report 5 Template (The report must be completely hand written following this template)

Negative impedance convertor

[Draw a circuit diagram of a negative capacitor here]

Observation table

| Observation table | | | | | |
|------------------------------------|------------------------------|--------------------------|------------------------------------|------------------------------|--|
| Frequency (vary from 100 Hz to 10k | Applied voltage magnitude | Current magnitude (A) | Phase of current w.r.t the voltage | Calculated complex impedance | |
| Hz) | (V) | | (degree leading or | (Ω) | |
| | | | lagging) | | |
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Plot on a graph paper: (a) how the magnitude of the impedance varies with frequency, (b) how the angle of the impedance varies with frequency

Comment whether you can create an inductor using a capacitor (or vice-versa) using this negative impedance convertor

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Gyrator

[Draw a gyrator here]

.....

From the two-port network representation of a gyrator, derive how an inductor can be simulated using a capacitor

Observation table

| | | Observation table | | |
|--------------------|-----------------|-------------------|--------------------|--------------------|
| Frequency (vary | Applied voltage | Current magnitude | Phase of current | Calculated complex |
| from 100 Hz to 10k | magnitude | (A) | w.r.t the voltage | impedance |
| Hz) | (V) | | (degree leading or | (Ω) |
| | | | lagging) | |
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Plot on a graph paper: (a) how the magnitude of the impedance varies with frequency, (b) how the angle of the impedance varies with frequency

Full Signature with Pen _____