

EE 305: Module 1 (Circuit) Quiz, 26th Sep 2025

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Quiz Questions

Find the incorrect description about closed-loop amplifier compared to the open-loop configuration. (Choose only 1 answer)

- Increased Output Resistance
- Increased Input Resistance
- Less Gain Variation
- Increased Energy Transfer

Find the incorrect description about the phase relationships between voltage and current when a cosine voltage signal is applied to a linear electrical network with R, L, and C as components. (Choose only 1 answer)

- Current is in Phase with Voltage if R is non-zero while L=0 and C=0
- Current leads voltage by some angle between 0 and 90-degrees when R and C are non-zero while L=0
- Current lags voltage by 90-degree when C is non-zero while R=C=0



Choose the closest percentage of the output voltage level after a time constant (=RC), when it is compared to the full voltage-level in the steady-state, when a step function is applied to a RC low-pass filter circuit. (Choose only 1 answer)

- 59%
- 63%
- 67%
- 71%

What is the signal function we cannot generate using function generators? (Choose only 1 answer)

- Square Wave
- Random Bit Pattern
- Arbitrary Wave
- Clock Pulse

What is the nominal capacitance value of a ceramic capacitor with the label '476' on its surface? (Choose only 1 answer)

- 47 micro-farad
- 47 nano-farad
- 4.7 micro-farad
- 4.7 nano-farad



Find the incorrect description about the Sallen-Key low-pass filter. (Choose only 1 answer)

- Amplify Input Signal with Programmable Gain
- Filter High-Frequency Signal Components
- Isolate Input/Output Impedance
- Convert Voltage Signals to Current Signals

Find a device that is not a transducer from the following list. (Choose only 1 answer)

- Transconductor
- Sallen-Key Filter
- Actuator
- Thermometer

What is the device in the speaker that converts the incoming audio signals to the electrical signal? (Choose only 1 answer)

- Resistor
- Battery
- Inductor
- Capacitor



Find the description about the output response from a linear electrical network (a circuit that consists of R, L, or C components) that is impossible when a sine wave is applied as an input. (Choose only 1 answer)

- Amplitude Degradation
- Phase shift
- Frequency Shift
- Signal Inversion

Find the incorrect description about LM386 operational amplifier you used during the experiment 3. (Choose only 1 answer)

- Differential Input & Single-ended Output
- Programmable Gain
- Bandwidth of 1MHz
- Single Supply voltage (Vs)

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2/2페이지

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