

HACETTEPE UNIVERSITY DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING ELE-313 ELECTRONICS LABORATORY II

EXPERIMENT – 4 OPERATIONAL AMPLIFIERS

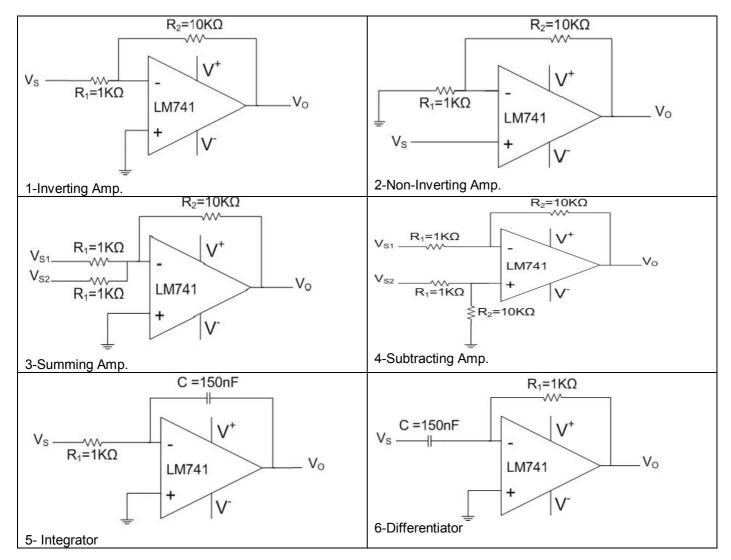
PRELIMINARY

1) Determine transfer characteristics of the following circuits.

2) Plot the input/output waveforms for the following circuits each by using Pspice. Compare the simulation results with the theoretical ones. For each circuit, use below input waveforms respectively.

- 1- Inverting Amp: Apply a $0.5V_{p-p}$ 1kHz sinusoidal signal.
- 2- Non-Inverting Amp: Apply a 0.5Vp-p 1kHz sinusoidal signal
- 3- Summing Amp: Apply a $1V_{\text{p-p}}$ 1kHz sinusoidal signal to V_{S1} and $0.3V_{\text{p-p}}$ 1kHz sinusoidal signal to V_{S2}
- 4- Subtracting Amp: Apply a $1V_{p-p}$ 1kHz sinusoidal signal to V_{S1} and $0.5V_{p-p}$ 1kHz sinusoidal signal to V_{S2}
- 5- Integrator: Apply a 1kHz $8V_{p-p}$ square wave as input
- 6- Differentiator: Apply a 1kHz 8V_{p-p} triangular wave as input

Note: Use LM741 in opamp.olb for spice simulation. Take V+=10V and V-=-10V.



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