

## Design Requirement

- In the cascaded circuit,  $V_{OA} = K_A \times V_{IA}$ , where  $K_A$  is the same value given in Table 2 in Circuit Design Part A.
- In the cascaded circuit,  $V_{OB} = K_B \times V_{IB}$ , where  $K_B$  is the same value given in Table 2 in Circuit Design Part A.
- In the cascaded circuit,  $V_O = K_A \times K_B \times K_C \times V_S$ , where  $K_C = 60$ . In addition, the output voltage  $V_O$  must be in phase with the input voltage  $V_S$ .

## Design Constraint

- You are allowed to use any type of circuit component and device available in the laboratory including resistor, inductor, capacitor, op-amp, etc.
- All resistors that you use must have resistances within the range of 1 k $\Omega$  to 10 k $\Omega$ . Refer to APPENDIX II for available resistors.
- If you use op-amp, you are allowed to use a maximum of TWO op-amps only.
- Use as FEWEST components as possible.