

ShanghaiTech University  
School of Information Science and Technology

EE112 Lab Experiments

**Experiment 1: Non- Ideal Op-Amps**

**3. Lab**

**3.1 DC Open Loop Transfer Characteristic**

Measured values of attenuator resistors: \_\_\_\_\_, \_\_\_\_\_

Open loop gain  $A_0$ : \_\_\_\_\_

Voltage offset  $V_{off} \equiv -V_{shift}$ : \_\_\_\_\_

**3.2 Nulling the Offset Voltage**

Measured resistance values between wiper and outside leads of potentiometer:

\_\_\_\_\_, \_\_\_\_\_

**3.3 Slew Rate Measurement in Unity Gain Configuration**

Slew Rate: \_\_\_\_\_

Attach your oscilloscope trace(s) of the slew rate measurements to the end of the worksheet.

**3.4 Gain and Bandwidth in Unity Gain Configuration**

Attach your oscilloscope trace of the slewing output sine signal to the end of the worksheet.

Gain  $A_0$ : \_\_\_\_\_

Bandwidth  $f_{3dB}$ : \_\_\_\_\_

**3.5 Gain and Bandwidth in Non-Inverting Amplifier Configuration**

$R = 10\text{ k}\Omega$ :      Gain  $A_0$ : \_\_\_\_\_

Bandwidth  $f_{3dB}$ : \_\_\_\_\_

$R = 100\text{ k}\Omega$ :      Gain  $A_0$ : \_\_\_\_\_

Bandwidth  $f_{3dB}$ : \_\_\_\_\_

Attach your plot of the magnitude responses  $20\log|V_{out}/V_{in}|$  of the unity gain amplifier from Problem 3.4 and the two non-inverting amplifiers to the end of the worksheet.