Polish Japanese Academy of Information Technology

Lab. 5	Operational amplifiers	Date:

name and surname	points	Supervisor

1. Offset voltage measurement.

$U_{Offsetvoltage} = ... [mV]$

2. Open loop output voltage measurement

$U_{Open} = ... [V]$

Explain points 1 and 2:

3. Parameters of inverting operational amplifiers measurement

Find gain and input resistance of inverting amplifier

U_{in}	$U_{\text{in}}-$	U_{out}	R_1	k_U	R_{in}
[V]	[mV]	[V]	$[k\Omega]$	[V/V]	$[k\Omega]$
notes				$k_U = \frac{U_{out}}{U_{\text{in}}}$	$R_{\text{in}} = \frac{U_{\text{in}}}{I_{\text{in}}}$

$$I_{\text{in}} = \frac{U_{\text{in}} - U_{\text{in}}\text{-}}{R_1}$$

4. Parameters of noninverting operational amplifiers measurement

Find gain and input resistance of noninverting amplifier

U_{in}	$U_{\text{in}}+$	U_{out}	R_3	k_U	R_{in}
[V]	[V]	[V]	$[k\Omega]$	[V/V]	$[M\Omega]$
notes				$k_U = \frac{U_{out}}{U_{\text{in}}}$	$R_{\text{in}} = \frac{U_{\text{in}}}{I_{\text{in}}}$

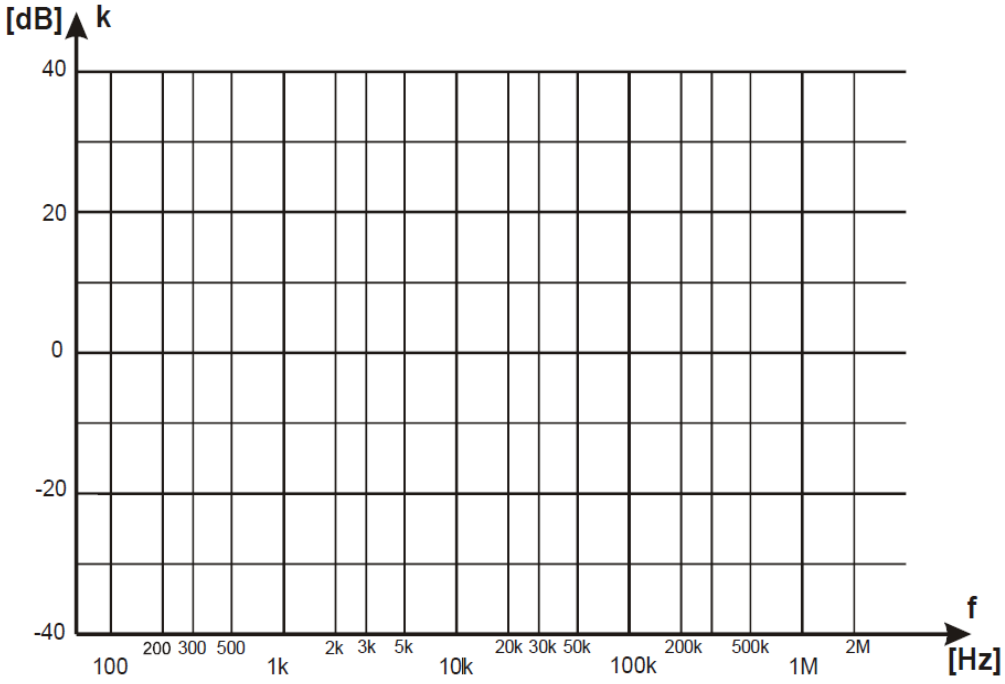
$$I_{\text{in}} = \frac{U_{\text{in}} - U_{\text{in}}+}{R_3}$$

5. Slew rate measurement

	a	sensitivity	ΔU	b	Time base	Δt	Slew rate
	[div]	[V/div]	[V]	[div]	$[\frac{\mu s}{\text{div}}]$	$[\mu s]$	$[\frac{V}{\mu s}]$
rising							
falling							
notes							$SR=\frac{\Delta U}{\Delta t}$

6. Inverting operational amplifier magnitude characteristic

f	a	Sa	U_{in}	b	Sb	U_{out}	k	k_{dB}
[Hz]	[div]	[V/div]	[V]	[div]	[V/div]	[V]	[V/V]	[dB]



f_{cut}=.....