Laboratory Three — AC Circuits

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Pre-Lab

I

$$RiseTime = \frac{arcsin(0.8)}{pi \cdot Freq} = \frac{T \cdot arcsin(0.8)}{pi}$$

$$RiseTime(50kHz) = \frac{arcsin(0.8)}{pi \cdot 50000} = 5.9033 \times 10^{-6} \mu s$$

II

$$MeasuredRatioof \frac{R_1}{/} R_2 = \frac{R_1}{R_2} = \frac{V_1}{V_2} = \frac{1.5}{2} = 0.75$$

$$CalculatedRatioof \frac{R_1}{/} R_2 = \frac{R_1}{R_2} = \frac{100}{200} = 0.5$$

$$PercentageError = \frac{measured - calculated}{calculated} = \frac{0.75 - 0.5}{0.5} = 50\%$$

III

$$V_{D0} = V_S - V_{out} = 4.850 - 608.74 \times 10^{-3} = 4.24V$$

Post-Lab

I

II

III

IV

V

VI