ID									Name:

Experiment #6: Mutual Inductance

Table (6.1)

$\phi 0$	V_i (mV)	I_p (mA)	$Z_{i\,(NL)}$ (Ω)	L_p (μH)	R_p (Ω)

Table (6.2)

V_s (mV)	$\angle v_s^{\,0}$	M (μH)

Table (6.3)

$\phi 0$	V_i (mV)	I_s (mA)	$Z_{i\,(NL)}$ (Ω)	L_S (μH)	R_s (Ω)

V_p (mV)	$\angle v_p^{\,0}$	M (μH)

Table (6.4)

$\phi 0$	V_i (mV)	I_1 (mA)	$Z_i = [V_i/I_1]$ (Ω)	L_A (μH)

Table (6.5)

$\phi 0$	V_i (mV)	I_1 (mA)	Z_i (Ω)	L_B (μH)

Table (6.6)

$\phi 0$	V_i (mV)	I_1 (mA)	Z_1 (Ω)	Z_{21} (measured)	Z_{21} (calculated)

Table (6.7)

$\phi 0$	V_i (mV)	I_1 (mA)	Z_1 (Ω)	Z_{21} (measured)	Z_{21} (calculated)

Table (6.8)

$\phi 0$	V_i (mV)	I_1 (mA)	Z_1 (Ω)	Z_{21} (measured)	Z_{21} (calculated)

(1)   In comparing the different methods of measuring the value of the mutual inductance between the two coils, which one would you consider to be more reliable? Explain your answer.

(2)   Suppose the coefficient of coupling between the two coils is close to unity, what would be the value of the turn ratio of the coils set?

(3)   In comparing the calculated and the measured values of the impedance reflections, are they close in values, and what are the sources of errors?