

STUDENT CODE								

			APPAR	ATU	S NI	UMBEI	R			
										_
Coil 1:	air core									
	R //Ω	V <sub>A</sub> /V	ΔV <sub>A</sub> /V	V/V		Δ <i>V</i> /V	V <sub>R</sub> ·/V		$\Delta V_R / V$	V <sub>O</sub> /V
With	,22	rsi -	ni -	, -			- "		n, •	
one polarity										
With reverse										
polarity										
Average										
	Ζ/Ω	$R/\Omega$	Χ/Ω		<i>L/</i> H					
Coil 1										
air core										
	<i>u</i> <sub>S</sub> ( <i>Z</i> )	u <sub>s</sub> (R)	$u_{\rm r}(Z)$	u <sub>r</sub> (R)		$u_{c}(Z)$	u <sub>c</sub> (R)		$u_{c}(X)$	$u_{c}(L)$
Coil 1	~3( <del>-</del> /	~3(.1)		~[(,,)		C( <b>-</b> /			~C(* '/	
air core										
$R_1$					<u>+</u>			Ω		
/11					<u>-</u>			22		
<i>L</i> <sub>1</sub>					<u>+</u>			mH	l	
L								I		



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Coil	η.	air	core	
COII	7:	air	core	

	R′/Ω	V <sub>A</sub> /V	$\Delta V_A/V$	V/V	$\Delta V/V$	$V_R/V$	$\Delta V_R / V$	V <sub>O</sub> /V
With								
one								
polarity								
With								
reverse								
polarity								
Average								

	Ζ/Ω	$R/\Omega$	Χ/Ω	L/H
Coil 2				
air core				

	$u_{\rm S}(Z)$	$u_{\rm S}(R)$	$u_{\rm r}(Z)$	$u_{\rm r}(R)$	$u_{\rm C}(Z)$	$u_{\rm C}(R)$	$u_{\rm C}(X)$	$u_{\rm C}(L)$
Coil 2								
air core								

R <sub>2</sub>	±	Ω
L <sub>2</sub>	±	mH



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Coil	1 1		Λ	١,	_	_	
COL	ı	•	Α	1 (	1	( )	re

	<i>R′</i> /Ω	V <sub>A</sub> /V	$\Delta V_A/V$	V/V	Δ <i>V</i> /V	V <sub>R</sub> /V	$\Delta V_R / V$	V <sub>o</sub> /V
With one polarity	71 / 22	T AJ T	FAJ -	.,.		· K7 ·	ZVRYV	70,7
With reverse polarity								
Average								

	Ζ*/Ω	$R^*/\Omega$	Χ*/Ω	<i>L*/</i> H
Coil 1 Al core				
Al core				

	$u_{\rm S}(Z^*)$	$u_{\rm S}(R^*)$	$u_{\rm r}(Z^*)$	$u_{\rm r}(R^*)$	$u_{\rm C}(Z^*)$	$u_{\rm C}(R^*)$	$u_{c}(X^{*})$	$u_{\rm C}(L^*)$
Coil 1								
Al core								

R* <sub>1</sub>	±	Ω
L* <sub>1</sub>	±	mH

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Coi	12.	Λ١	core	
		AI		

	$R'/\Omega$	V <sub>A</sub> /V	$\Delta V_A/V$	V/V	Δ <i>V</i> /V	$V_R/V$	$\Delta V_R / V$	V <sub>O</sub> /V
With								
one								
polarity								
With								
reverse								
polarity								
Average								

	Z*/Ω	$R^*/\Omega$	Χ*/Ω	<i>L*/</i> H
Coil 2 Al core				
Al core				

	$u_{\rm S}(Z^*)$	$u_{\rm S}(R^*)$	$u_{\rm r}(Z^*)$	$u_{\rm r}(R^*)$	$u_{\rm C}(Z^*)$	$u_{\rm C}(R^*)$	$u_{c}(X^{*})$	$u_{\rm C}(L^*)$
Coil 2								
Al								
core								

R*2	±	Ω
L*2	±	mH

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PART 2				
M <sub>12</sub> =	mH			
M <sub>21</sub> =	mH			
M <sub>av</sub> =	mH			
k =				
M* <sub>12</sub> =	mH			
M* <sub>21</sub> =	mH			
M* <sub>av</sub> =	mH			
k* =				
1				

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5	STUDENT CODE							

R

R' = 300  $\Omega$ 

	Obs No	$R_{L}/\Omega$	V <sub>A</sub> /V	V/V	$V_{R'}/V$	V <sub>O</sub> /V
With one	1					
polarity	<b>↓</b> ♣					
With reverse						
polarity						
Average						
With one	2					
polarity						
With reverse						
polarity	_					
Average						
		1				
	_					

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h) Linearised equation for graph

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EXPERIMENT 2

	Obs No	$R_{L}/\Omega$	V <sub>A</sub> /V	V/V	V <sub>R′</sub> /V	V <sub>A</sub> /V
With one						
polarity						
With reverse						
polarity						
Average						
With one						
polarity	_					
With reverse polarity						
	_					
Average						
	1					
	-					

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M and Xs from graph
M = mH
$X_S = \Omega$



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Р	Δ	RT	2

K and I) Calculated data

$R_{L}/\Omega$	$Z_{PE}$	$R_{PE}$	X <sub>PE</sub>	$R_{R}$	X <sub>R</sub>

Inference from graph of  $X_{PE}$  vs  $X_R$  expressed in the form of an equation

Value of  $R_L$  at which  $R_R$  is maximum

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PART 4						
For coil 1	$L L_{core}/R_{co}$	re =				
For coil	$2 L_{core}/R_{co}$	_				
ror con	Z Core/Ncc	ore —				
	Δ					
Formula	giving ΔP					
ΔP =	mW					