			<i>Physics Department Electricity and Magnetism Laboratory</i>						
Dread	liese		Studente wi		the	vo eti		Ctown control	
Group			Students who made the practice				ce	Stamp control	
Session Date		Date							
Deadline Date		Date					111		
		1		fair.	7.	1		17.153	
	E	LEC	TRICAL	MEA	4Sl	JR	EMI	ENTS	
				1.50			1.1	/ 1-1	
Nata									
Note:									
•	Inclu	de in the	tables the units an	nd the un	certain	ty of	the mea	asurements.	
E 1	Ile		ultimeter ac a	voltma		nd o	h ma ma		
5.1	US	e or mu	intimeter as a	voitme	eter a	na o	nmmo	eter.	
5.1.1 Measure, using the multimeter as a voltmeter, the DC voltage at the terminals of the battery. Compare with the value indicated by the manufacturer.									
			V=	±	()			
5.1.2 Measure, using the multimeter as an ohmmeter, the value of the two resistors, R_1 and R_2 .									
			$R_1 =$	±	()			
			D -		(1			
			R ₂ –	7 - 7	(1			
Compare these results with the value reported by the manufacturer using the color code.									
			$R_1 =$	±	()			
			$R_2 =$	±	()			
Comm measu a)	ents ireme Batte	and co ents and ry:	onclusions on tl values reported	he corre by the i	espono manufa	dence actur	e betw er:	veen experimental	
b)	Resis	tors:							

5.2. Using the multimeter as an ammeter.

5.2.1 Measure the voltage drop through the resistance $R_{\rm 1}$ connected in the circuit.

V= ± ()

5.2.2 Measure the current drop through the resistance R₁ (experimental value)

()

)

5.2.2 b) Calculate R_1 using Ohm's law (theoretical value).Compare it with the value obtained in 5.1.2.

I = + /

 $R_1 = \pm$ (

5.2.3 Measure the voltage drop through the resistance $R_{\rm 2}$ connected in the circuit.

 $V = \pm$ ()

Measure the DC current flowing through the resistance (experimental value).

 $I = \pm ()$

Calculate the current using Ohm's law and compare it with the value obtained using the ammeter.

I = ± ()

Comment experimental and theory values from resistor R_1 and current (use the resistor R_2).

a) Resistor R₁

b) Current I using R_2

5.3. Using the oscilloscope to measure amplitude and period of time-varying signals.

5.3.1 Measure, using the oscilloscope, the voltage value on the battery and compare this result with that obtained in paragraph 5.1.1.



5.3.1 Using the different transformer secondary outputs, measure the amplitude and frequency of each signal. Check that the output signals of the secondary are described by the equation. $V(t) = V_0 sen \omega t$

	V _{PP}	A T	V ₀	f
1		S/n	E (T	
2			1 13	
3			1	
4		S.	. S	
5		Sim	THE REAL PROPERTY AND INCOMENT	
6			Kinder	

5.3.3

5.3.1 a) Discuss the frequency values obtained.



5.3.4 Measure, using the multimeter as a voltmeter, the voltage at AC in at least three of the outputs of the transformer. Compare RMS voltage with the amplitude value for these outputs V_0 obtained in the previous section.

V_{ef}	V ₀
	V. 11
2 11	
6	
S.Lan	1333
	V _{ef}

Comparison and conclusion of the values of V_0 obtained from the RMS values and those obtained from the V_{PP} .

5.4. Obtain Lissajous patterns.

5.4.1 In this section is IMPORTANT to follow precisely the steps in the script, if you cannot display Lissajous figures, please seek help from the instructor before touching the controls of the oscilloscope without due knowledge.

Once you display the Lissajous patterns corresponding to Figure 6 of the screenplay (almost a circle when the phase shift between the signal at the output of the transformer and the signal generator is π / 2), use the table 1 of the script to find the value of the frequency at the transformer secondary output. Does this value coincide with the one measured in section 5.3.2?