

name _____

ID# _____

Experiment 4

The Oscilloscope

Measuring 2 Waveforms

	<u>Sine Wave</u>		<u>Square Wave</u>	
<u>frequency</u>	1.8 kHz	24.0 kHz	1.8 kHz	24.0 kHz
<u>counter reading</u>	_____	_____	_____	_____
<u>seconds/div.</u>	_____	_____	_____	_____
<u>no. of divisions</u>	_____	_____	_____	_____
<u>period</u>	_____	_____	_____	_____
<u>frequency</u>	_____	_____	_____	_____
<u>% error</u>	_____	_____	_____	_____

Measuring 20 Waveforms

<u>seconds/div.</u>	_____	_____	_____	_____
<u>no. of divisions</u>	_____	_____	_____	_____
<u>total time</u>	_____	_____	_____	_____
<u>one period</u>	_____	_____	_____	_____
<u>frequency</u>	_____	_____	_____	_____
<u>% error</u>	_____	_____	_____	_____

Equations and sample calculations:

(10 points)

Everyone who has ever watched a television doctor show has probably seen an electrocardiograph or heart monitor hooked up to a patient. If the line goes flat everybody starts working on the patient. What do you think the monitor is actually displaying?

Questions

1. Which piece of equipment would you adjust if you wanted a larger output voltage? **(2 points)**
2. What do you change if you want a wave with a different frequency? **(2 points)**
3. What are you changing if you change the sweep setting on the scope? **(2 points)**
4. What are you changing if you change the sensitivity setting on the scope? **(2 points)**
5. Doctors sometimes use an electroencephalograph to measure the electric potential at different parts of a person's brain. Electrodes are pasted to various places on the person's head and a lead is clipped to his earlobe. Why is the wire to the earlobe necessary? **(2 points)**