

Definitions:

Admittance (111b)	Inductor (111b)
Alternating Current (AC) (106, 109)	Lissajous Figure (109)
Amplifier (105, 116)	Oscilloscope (104, 105)
Angular frequency (109, 110R)	Reactance (109)
Cathode-ray Tube (CRT) (104,105)	Rectifier (108)
Diode (108)	Ripple factor (108, 109b)
Electron Gun (104)	Sawtooth Generator (105)
Filter Capacitor (108, 108b)	Sine Wave Generator (109)
Impedance (111b)	Sinusoidal (109, 110R)
Inductance (111b)	Square Wave Generator (106)

Discoveries

1. What is the "Edison Effect"? (104)
2. How can an oscilloscope be used to make a voltage vs. time graph? (105, 106)
3. How can it make a current vs. time graph? (106)
4. How can an oscilloscope plot one voltage vs. another? (110)
5. How can you use a resistor, oscilloscope, and a square-wave generator to measure a capacitance? (107)
6. For sinusoidal alternating current, how must a capacitor's current amplitude be related to frequency if its voltage amplitude is fixed? _____ (110)
7. In what SI units can we measure reactance and impedance? _____ (110, 111)
8. How can capacitive reactance be calculated from capacitance and frequency?
Include the proportionality constant. (109, 110, 111b) _____
9. How can the impedance of a series combination of components be determined from the resistance and reactance of the components? _____ (111b, 111b)
10. How must inductive reactance be related to frequency? _____ (111b, 111b)
11. When a capacitor and an inductor are connected in series, there is one frequency at which the combination has zero reactance. How can that special frequency be predicted? _____ (111b, 111b)
12. How can the phase difference between two sinusoidally alternating voltages be measured with an oscilloscope, and what happens if the phase difference is 90 degrees? (110)
13. How can the maximum slope of a sinusoidal curve be calculated from its period and amplitude? (110R, RS VII)
14. What is the derivative of the function $y = A \sin x$? _____
- of $y = A \sin(kx)$? _____ (110R,111b)
15. What device can be connected in series with a tweeter to block low-frequency alternating current and direct current? (109)