

**PHYS 1102****Information Sheet**

$$n = c/v \qquad \sin i / \sin r = n_2 / n_1 \qquad \frac{1}{o} + \frac{1}{i} = \frac{1}{f} \qquad m = s_i / s_o$$

$$m = -i/o \qquad R = 2f \qquad I = I_m \left( \frac{\sin \alpha}{\alpha} \right)^2 \qquad \alpha = \left( \frac{\pi a}{\lambda} \right) \sin \theta$$

$$\sin \theta = \lambda/a \qquad I = I_o \cos^2 \theta \qquad B = kI_1/r \qquad F = I_2 l B \qquad R = \rho L/A$$

$$V = IR \qquad R_s = R_1 + R_2 + \dots + R_n \qquad I = I_1 = I_2 = \dots = I_n$$

$$V = k \frac{Q}{r} \qquad E = -\frac{\Delta V}{\Delta s} \qquad \frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} + \dots + \frac{1}{R_n}$$

$$d \sin \theta = m\lambda \qquad d \sin \theta = \left( m + \frac{1}{2} \right) \lambda \qquad I = I_m \left[ \left( \frac{\sin \alpha}{\alpha} \right) \cos \beta \right]^2 \qquad \beta = \frac{\pi d}{\lambda} \sin \theta$$

$$V_c = V_o e^{-t/RC} \qquad V_c = V_o (1 - e^{-t/RC}) \qquad C = Q/V \qquad \Phi = BA \cos \theta$$

$$|emf| = N \left| \frac{\Delta \Phi}{\Delta t} \right| \qquad F_{12} = \frac{1}{4\pi\epsilon_o} \left( \frac{|q_1||q_2|}{r_{12}^2} \right) \qquad E_2 = \frac{1}{4\pi\epsilon_o} \left( \frac{|q_2|}{r^2} \right) \qquad F_{12} = |q_1|E_2$$

$$g = 9.81 \text{ m/s}^2 \qquad \epsilon_o = 8.854 \times 10^{-12} \frac{\text{C}^2}{\text{Nm}^2}$$

$$\log(xy) = \log x + \log y \qquad \log(x^n) = n \log x$$