# GENERAL PHYSICS FORMULAS

## 1. KINEMATICS

$v = v_0 + at$ Velocity-Time

$\Delta x = v_0 t + \frac{1}{2}at^2$ Displacement

$v^2 = v_0^2 + 2a\Delta x$ Time-Independent

## 2. DYNAMICS & FORCE

$F = ma$ Newton's 2nd Law

$F_f \leq \mu N$ Friction

$p = mv$ Momentum

## 3. ENERGY & POWER

$W = Fd\cos\theta$ Work

$KE = \frac{1}{2}mv^2$ Kinetic Energy

$PE = mgh$ Potential Energy

$P = W / t$ Power

## 4. ELECTRICITY

$V = IR$ Ohm's Law

$P = IV$ Electric Power

$F = k(q_1 q_2 / r^2)$ Coulomb's Law

## 5. WAVES & OPTICS

$v = f\lambda$ Wave Speed

$n = c / v$ Refractive Index

$1/f = 1/d_o + 1/d_i$ Mirror/Lens Eq.

## 6. THERMODYNAMICS

$Q = mc\Delta T$ Specific Heat

$PV = nRT$ Ideal Gas Law

$\Delta U = Q - W$ 1st Law Thermo