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ENGINEERING ENTRANCE

JEE Main & Advanced

Physics Formula Sheet

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Mechanics

- Kinematics: v = u + at ; s = ut + 1/2 a t^2 ; v^2 = u^2 + 2as.
- Newton's second law: F = ma ; momentum p = mv.
- Work-energy theorem: W = change in kinetic energy.
- Gravitation: F = G m1 m2 / r^2 ; g = G M / R^2.

Electricity & Magnetism

- Ohm's law: V = IR ; power P = VI = I^2 R.
- Coulomb's law: F = k q1 q2 / r^2.
- Capacitance: Q = CV ; energy = 1/2 C V^2.
- Magnetic force on a charge: F = qvB sin(theta).

Waves, Optics & Modern

- SHM: T = 2(pi) sqrt(m/k) ; wave speed v = f(lambda).
- Lens/mirror formula: 1/v - 1/u = 1/f (sign conventions).
- Photoelectric effect: E = h(nu) ; KEmax = h(nu) - work function.
- de Broglie wavelength: lambda = h / p.