The International Medical Admissions Test (IMAT)

Required Physics Topics [2024]

A. Measurements

1. Fundamental physical quantities
2. International System of units (SI)
3. Derived physical quantities
4. Metric (SI) multipliers
5. Scientific notation
6. Dimensional analysis
7. Vectors and scalars
8. Vector operations

B. Mechanics [Kinematics + Dynamics]

1. Uniform motion (constant velocity)
2. SUVAT equations (constant acceleration)
3. Newton's Laws of Motion
4. The law of universal gravitation
5. Work, energy, and power
6. Hooke's law and elastic potential energy
7. Principle of conservation of mechanical energy
8. Momentum and impulse
9. Principle of conservation of momentum

C. Circular Motion

1. Uniform circular motion (angular velocity)
2. Centripetal force and acceleration
3. Angular momentum

D. Waves

1. Basics of oscillations
2. Simple Harmonic Motion

E. Thermodynamics

1. Basics of thermal physics
2. Mechanisms of heat transfer
3. Specific heat capacity & Thermal capacity
4. Latent heat and phase change
5. Ideal (perfect) gas laws
6. First law of thermodynamics
7. Second law of thermodynamics (entropy)

F. Fluid Mechanics

1. Fluid pressure (non-SI units)
2. Archimedes' principle
3. Pascal's principle
4. Stevin's law of hydrostatics
5. Continuity equation
6. Bernoulli's equation
7. Viscosity in real fluids

G. Electric Physics

1. Direct current and Ohm's law
2. Resistance and resistivity
3. Series & parallel connections
4. Coulomb's law
5. Electric power
6. Electric field and electric potential
7. Alternating current (period & frequency)
8. Capacitors and dielectric constant
9. Kirchhoff's principles

H. Electromagnetism

1. Magnetic field
2. Magnetic force on electric currents
3. Electromagnetic induction