Basic Physics I

Date of Ist sessional Exam: 09/10/2017

Syllabus

Unit I: Kinetics; Force, newtons's laws of motion, frames, momentum, momentum of systems of particles, conservation laws, centre of mass.

Units II: Moment of Inertia; Definition, radius of gyration, theorem of parallel and perpendicular axes, moment of inertia of simple systems: disc, cylinder, rod, ring, rectangular lamina, sphere.

Date of IInd sessional Exam: 13/10/2017

Syllabus

Unit III: Mechanical properties of matter: modulus of rigidity, poisson's ratio, relation connecting different elastic constants, viscosity, poiseulle's equation of liquid flow through a narrow tube.

Unit IV: Oscillations and waves: simple harmonic oscillation, damped harmonic oscilation and forced oscillation, Q factor and resonance. differential equation of one dimensional wave and its solution, reflection and transmission of waves.

Date of IInd sessional Exam: 16/10/2017 (Assignment)

Syllabus

Unit V: Relativity: Galilan transformation, axioms of relativity, Lorentz transformation and its consequences: length contraction, time dilation, simultaneity, addition of velocity, variation of mass with velocity, mass energy relation.

Timing for all Sessionals are 2.00pm to 3.00 pm

Introductory Physics I

Date of Ist sessional Exam: 09/10/2017

Syllabus

Kinetics; Force, newtons's laws of motion, frames, momentum, momentum of systems of particles, conservation laws, centre of mass, variable mass system, collison in laboratory and centre of mass system and scattering.

Date of IInd sessional Exam: 13/10/2017

Syllabus

Mechanical properties of matter: modulus of rigidity, poisson's ratio, relation connecting different elastic constants, viscosity, poiseulle's equation of liquid flow through a narrow tube.

Oscillations and waves: simple harmonic oscillation, damped harmonic oscilation and forced oscillation, Q factor and resonance. differential equation of one dimensional wave and its solution, reflection and transmission of waves.

Date of IInd sessional Exam: 16/10/2017 (Assignment)

Syllabus

Relativity: Galilan transformation, axioms of relativity, Lorentz transformation and its consequences: length contraction, time dilation, simultaneity, addition of velocity, variation of mass with velocity, mass energy relation, Doppler effect.

Rigid body motion: Rigid body, moment of inertia, rigid body kinematics, rigid body kinetics, motion of gyroscope.

Timing for all Sessionals are 2.00pm to 3.00 pm

CAP Sessional Exams

General Properties of Matter

Date of 1st Sessional Exam: 10/10/2017

Syllabus

Unit-I: Newton's Law of gravitation, Gravitational potential and field, Gauss theorem and its application in symmetric problems.

Unit-II: Stress and Strain, Hooke's Law, Inter relations of elastic constants, Torsional rigidity, bending moments and shearing forces, cantilever, strain energy.

Date of 2nd Sessional Exam: 13/10/2017

Syllabus

Unit-III: Stream line and flow line, equation of continuity, Euler's equation of stream line motion, Bernoulli's equation and its applications.

Unit-IV: Surface tension and surface energy, contact angle, excess pressure on a curved liquid surface, capillary rise, temperature dependence of surface tension.

Note: Students are directed to contact Dr. Ashish Kumar Mishra for timings and other details