

SARASWATI MAHILA MAHAVIDHYALAYA, PALWAL

LESSON-PLAN

Class: M.Sc. - I Sem (Physics)

Semester: ODD/EVEN

Subject: Classical Mechanics

Session: 2020-21

Lecture Number	Topic
Lect. 1	Survey of elementary particle.
Lect. 2	Lagrangian formulation: Newtonian mech. of one and many.
Lect. 3	conservation laws for one particle.
Lect. 4	conservation laws for many particle.
Lect. 5	constraints - classification
Lect. 6	D'Alembert Principle; Lagrange's equation.
Lect. 7	Lagrange's equation for non-conservation.
Lect. 8	generalized co-ordinates and degree of freedom.
Lect. 9	generalized co-ordinates - types and momenta
Lect. 10	Integral of motion
Lect. 11	Symmetries of space and time - conservation laws.
Lect. 12	Invariance under Galilean transformation.
Lect. 13	Numerical problem on D'Alembert, Lagrange's eqn.
Lect. 14	Atwood machine, simple pendulum
Lect. 15	Rotating and non-rotating frame.
Lect. 16	Inertial force, terrestrial application of Coriolis force.
Lect. 17	Two Body Problem.

Signature:

SARASWATI MAHILA MAHAVIDHYALAYA, PALWAL

LESSON-PLAN

Class: M.Sc-Ist sem (Physics)

Semester: ODD/EVEN

Subject: Classical Mech.

Session: 2020-21

Lecture Number	Topic
lect. 18	Central force - definition gravitational force.
lect. 19	analysis of orbit closure and stability of circular orbit.
lect. 20	Kepler's Law - Introduction
lect. 21	derivation of Kepler's Law.
lect. 22	artificial satellites.
lect. 23	Rutherford Scattering.
lect. 24	scattering cross section.
lect. 25	Numerical problem on Two Body, Kepler Law.
lect. 26	variational principle. (variation and ends points)
lect. 27	equation of motion and Hamilton-Jacobi eqn.
lect. 28	Principle of least action.
lect. 29	derivation of equation of motion.
lect. 30	Hamilton principle
lect. 31	Hamilton characteristic function.
lect. 32	Problem of Hamilton Jacobi-eqn.
lect. 33	canonical transformation.
lect. 34	generating function.

Shikha

Signature:

