

Lesson Plan  
Session 2019-20

Class: B.Sc-NonMedical  
Subject: Mechanics-II  
Semester-2nd

Session 2019-20

Date	Lecture	Topic of Lecture
01.01.2020	L-1	Introduction of Mechanics. Experiment - M.T. of flywheel.
02.01.2020		Guru Gobind Singh Jayanti
03.01.2020	L-2	Mechanics of particle, conservative forces conservation theorem
04.01.2020	L-3	Forces of constraints, classification of constraints
05.01.2020		Sunday
06.01.2020	L-4	Degree of freedom, Generalized coordi- nate, about velocity, acceleration
07.01.2020	L-5	G.C of Displacement, Momentum and potential.
08.01.2020	L-6	Advantages of G.C. Hamilton principle. exp - M.T. of irregular body using tension pendulum.
09.01.2020	L-7	Application of Lagrange's eq <sup>n</sup> . exp. Surface Tension by Jaeger's method
10.01.2020	L-8	1. Simple pendulum 2. double pendulum
11.01.2020	L-9	Atwood's machine, one-D harmonic oscillator
12.01.2020		Sunday
13.01.2020	L-10	Numerical and conceptual Que.
14.01.2020	L-11	Problems discussed and revision
15.01.2020	L-12	Unit-2nd - Introduction, Vibration vs oscillations. exp - Young's modulus bending of beam.
16.01.2020	L-13	Simple harmonic oscillation, Differential eq <sup>n</sup> . ex. repeat that exp.
17.01.2020	L-14	Relation w/ displacement, velocity & acc.
18.01.2020	L-15	K.E, P.E, Total energy in mechanical oscillator.
19.01.2020		Sunday
20.01.2020	L-16	Simple Pendulum, and its derivation.
21.01.2020	L-17	Compound Pendulum, Time period of compound pendulum
22.01.2020	L-18	Test - class Unit - 1st
23.01.2020	L-19	Simple harmonic motion. Diff. eq <sup>n</sup> .
24.01.2020	L-20	Damping, Damped SH oscillator,
25.01.2020	L-21	forced oscillator, equation of forced oscillator
26.01.2020		Sunday/Republic Day
27.01.2020	L-22	Solution of eq <sup>n</sup> of forced oscillator.
28.01.2020	L-23	Numericals and Revision.
29.01.2020	L-24	Unit - 3rd. frame of reference exp. Modulus of rigidity by Maxwell's needle.
30.01.2020		Basant Panchmi/Shri Chhotu Ram Jayanti
31.01.2020	L-25	Inertial frame of reference. Non inertial frame of reference.
01.02.2020	L-26	Galilean transformation
02.02.2020		Sunday

03.02.2020	L-27	Galilen invariance, Velocity, acceleration transformation	
04.02.2020	L-28	Class-Test unit-2nd	Test
05.02.2020	L-29	Invariance law of conservation, exp- continuous Maxwell's needle	
06.02.2020	L-30	Theory of relativity. exp. - Frequency of A.C. mains by electrical vibrator	
07.02.2020	L-31	Michelson-Morley experiment	
08.02.2020	L-32	Transformation Equation	
09.02.2020		Sunday/Guru Ravidas's Birthday	
10.02.2020	L-33	Lorentz transformation length cont; time dilation	
11.02.2020	L-34	Numericals, Revision	Test
12.02.2020	L-35	Unit-IV - velocity transformation. exp- continuous	
13.02.2020			
14.02.2020		Unit Test	
15.02.2020			
16.02.2020		Sunday	
17.02.2020	L-36	Numerical of velocity transformation	
18.02.2020	L-37	Mass energy equivalence, Numericals	
19.02.2020	L-38	Relativistic momentum, energy	
20.02.2020	L-39	Class-Test - Unit-III vel exp- Zener diode as voltage regulator	Test
21.02.2020		Maha Shivratri	
22.02.2020	L-40	Transformation of momentum and energy.	
23.02.2020		Sunday	
24.02.2020	L-41	Mandel's particle	
25.02.2020	L-42	Relativistic Doppler effect, longitudinal and transverse	
26.02.2020	L-43	Experimental verification. exp- continuous	
27.02.2020	L-44	Minkowski space exp- Verification of T.S law by photo cell.	
28.02.2020	L-45	Numericals and	
29.02.2020	L-46	Problems discuss and revision.	TV
01.03.2020		Sunday	
02.03.2020	L-47	Paper 2nd - Unit-Ist Electromagnetism Introduction	
03.03.2020	L-48	View at glance, Magnetic flux, EM induction	
04.03.2020	L-49	Faraday's law of EMI. exp- To draw P.B. & R.B. of PN junction.	
05.03.2020	L-50	Self inductance and mutual inductance	
06.03.2020	L-51	Class-test unit-IV (Paper-Ist)	Test
07.03.2020	L-52	Energy stored in inductor, A.C. D.C. and steady current	
08.03.2020			
09.03.2020			
10.03.2020			
11.03.2020			
12.03.2020		Holi Break	

13.03.2020		
14.03.2020		
15.03.2020		
16.03.2020	L-53	Analysis of A.C. circuit using $j$ -operator
17.03.2020	L-54	A.C. circuit using Pure resistance, L.
18.03.2020	L-55	A.C. circuit using C, L-R circuit exp. continued
19.03.2020	L-56	A.C. circuit using C-R, L-C R circuit exp. by bar pendulum.
20.03.2020	L-57	Series, Parallel resonance circuit
21.03.2020	L-58	Q-factor, Numerical.
22.03.2020	Sunday	
23.03.2020	Shahidi Diwas	
24.03.2020	L-59	Unit-2nd - Maxwell equations.
25.03.2020	L-60	Maxwell's fixing of Ampere's law exp. viscosity of water by its flow through uniform capillary
26.03.2020	L-61	Displacement current exp. - continued
27.03.2020	L-62	Maxwell's eq <sup>n</sup> in vacuum
28.03.2020	L-63	Class Test - Paper-2nd Unit-1st
29.03.2020	Sunday	
30.03.2020	L-64	Maxwell eq <sup>n</sup> in matter.
31.03.2020	L-65	Equation of continuity
01.04.2020	L-66	Poynting theorem, Numericals exp. revised
02.04.2020	Ram Navmi	
03.04.2020	L-67	Momentum in electromagnetic field
04.04.2020	L-68	Angular momentum in e-m field
05.04.2020	Sunday	
06.04.2020	Mahavir Jayanti	
07.04.2020	L-69	Energy density in em field, Numerical
08.04.2020	L-70	Unit-3rd Electromagnetic waves
09.04.2020	L-71	wave eq <sup>n</sup> for $\vec{E}$ and $\vec{B}$ fields
10.04.2020	L-72	EM waves through free space or vacuum
11.04.2020	L-73	EM waves through isotropic dielectric medium
12.04.2020	Sunday	
13.04.2020	L-74	Class Test - Paper-2nd Unit-II nd
14.04.2020	Dr. B.R. Ambedkar's Jayanti	
15.04.2020	L-75	Transverse nature of EM waves.
16.04.2020	L-76	Energy and momentum in EM waves.
17.04.2020	L-77	Propagation in linear media
18.04.2020	L-78	Reflection at Normal and oblique incidence
19.04.2020	Sunday	
20.04.2020	L-79	Transmission at Normal and oblique incidence

21.04.2020	L-80	Brewster angle, Numericals.	Th
22.04.2020	L-81	Unit-IV - EM fields. Introduction	
23.04.2020	L-82	Scalar and vector potential for EM field	
24.04.2020	L-83	Gaug, transformation, Coulomb gauge	
25.04.2020	L-84	Lorentz gauge, EM dipole radiation.	
26.04.2020	Sunday		
27.04.2020	L-85	Class Test - Unit-3 & 4. Paper and.	Test
28.04.2020	L-86	Magnetism as relativistic phenomenon	
29.04.2020	L-87	Transformation of EM field b/w two frames	
30.04.2020	L-88	Numericals, Revision.	Th