राजीव गांधी शासकीय स्नातकोत्तर महाविद्यालय

अम्बिकापुर, सरगुजा (छ.ग.)

शिक्षक दैनन्दनी पंजी

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Session:— 2022 – 23

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Teaching Lesson Plan

Paper code: TCC, PHY09

Class: B.Sc. I Sem. (Physics) Paper: Mechanics

Introductory core course (TCC)

Unit	Course Content/ Syllabus Unit Wise	Periods (Week- Month Wise)	Proposed Teaching Method
III.	Angular momentum of a particle and system of particle, Torque, Principle of conservation of angular momentum, Rotation about a fixed axis, moment of inertia, Theorem of parallel & perpendicular axes, Determination of moment of inertia of discrete and continous objects (1D, 2D & 3-D (rectangular, cylindrical and spherical), Kinetic energy of rotation, motion involving both translation and rotation.	1 Sept. 22 To 29 Sept. 22	Lecture/Green board base learning, problem solving based learning e-resources based learning, Notes, e-books based learning, Google classroom based learning, PPT
IV.	Law of gravitation, gravitional potential energy, Inertial and gravitional mass, potential and field due to spherical shell and solid sphere, Two body problem, its reduction to one body and its solution, Reduction of angular momentum, Kinetic energy and total energy. The energy eqn and energy diagram, Kepler's laws, Satellite in a circular orbit.	30 Sept. 22 To 24. Oct. 22	Lecture/ Green board learning, Inquiring based learning, youtube videos, link based learning, Google classroom based learning, problem based learning, e-resource based learning, Flipped learning, PPT, Notes.

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Teaching Lesson Plan

Class... B.Sc. I Sem. (Physics) Paper... Mechanics

Unit	Course Content/ Syllabus Unit Wise	Periods (Week- Month Wise)	Proposed Teaching Method
V:	Geosynchronous orbits Idea of SHM, Differential eqn of SHM and its solution, Kinetic energy, potential Energy, total energy and their time average values, compound pendulum, Damped oscillation, Forced oscillations, Trisent and Steady states, Sharpness of resonance, and Quality factor, Non-inertial frames and fictitious forces, Uniformly rotating frame, centrifugal force, coroils force and its application xx	25 Oct. 22 To 16 Nov. 22	Lecture based learning, e-resource based learning, Lecture, black board learning, Inquiring based learning, ppt based learning, youtube video, links based learning, e-books, resource based learning, Google Classroom based learning.

Teaching Lesson Plan

Class M.Sc. I Sem. (Physics) Paper Classical Mechanics

Unit	Course Content/ Syllabus Unit Wise	Periods (Week- Month Wise)	Proposed Teaching Method
I.	Angular momentum, Rotational kinetic energy, moment of inertia of a rigid body, principal moments of inertia & principal axes, M.I. tensor Euler's angles, Euler's Eqn of motion, Torque free motion of a rigid body	17 Sept.22 To 6 Oct.22	Lecture method, Inquiring based learning, Project based learning, e-resource link based learning, PPT,
II.	central force motion; D' Alembert principle, Lagranges Eqn, simple application of Lagrangian formulation, Hamiltonian principle, Method of Lagranges multiplier, conservation theorems, symmetry properties, Noether's theorem, conservation of energy, linear momentum & angular momentum as a consequence of homogeneity of time, space & isotropy of space.	17 Aug.22 To 8 Sept.22	youtube link based learning, Lecture based learning, Problem solving method, Peer-led Team learning, Flipped learning, PPT, Notes, google classroom based learning,
III.	Generalised momentum, Legendre transformation, Hamilton's Eqn of motion, simple application of Hamilton's formulation, cyclic coordinate, Routh's procedure, Hamilton's	9 Sept. 22 To 16 Sept. 22	e-resources based learning method, Lecture method, google classroom based learning, Problem solving method, Peer-led Team learning,

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Teaching **Lesson Plan**

Class M.Sc. I Sem. (Physics) Paper- I Classical Mechanics

Unit	Course Content/ Syllabus Unit Wise	Periods (Week- Month Wise)	Proposed Teaching Method
IV.	formulation of Relativistic Mechanics, Derivation of Hamilton's canonical Eq^{n} from Hamilton's variational principle, The principle of least action, canonical transformation generating function, Lagrange & poisson brackets as canonical invariants, Eq^{n} of motion in poisson bracket formulation, Infinitesimal contact Transformation, Liouville's theorem, Hamilton-Jacobi Eq^{n} & its appl. in simple harmonic oscillator and Kepler's problem.	7 Oct. 22 To 14 Oct. 22 15 Oct. 22 To 27 Oct. 22	Lecture based learning, youtube link based learning, e-resource based learning, PPT, Project based learning, Lecture Method, Inquiry based learning, Problem solving Method, Google classroom based learning.
V.	Defn of action and angle variable, Application of action & angle variables in simple harmonic oscillator & Kepler's problem, periodic motion, theory of small oscillations in Lagrangian formulation, normal modes, co-ordinates and its simple applications.	28 Oct. 22 To 12 Nov. 22	Blackboard / Lecture Teaching Method, Youtube links based learning, e-books resource based learning, Animated based learning, Note PPT based learning method.

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Principal

Teaching Lesson Plan

Class M.Sc. III Sem. (Physics) Paper III: Classical Electrodynamics

Unit	Course Content/ Syllabus Unit Wise	Periods (Week- Month Wise)	Proposed Teaching Method
I.	Electric field, Gauss law, diff. form of Gauss law, Another eqn of Electrostatics, Scalar potential, Boundary condition on $\vec{E}$ & $\vec{D}$, surface distribution of charges & dipoles, poisson & Laplace eqn, Green theorem, Formal solution of Electrostatics, Boundary value problems with Green's function, Electrostatic p.E:	18 July 22 To 23 Aug. 22	Lecture Method, Pdf, Notes, google classroom, e-pg pathsala, youtube videolinks, MOOCs e-resource links
II.	Boundary value problems in electrostatics, Methods of images, point charge in the presence of grounded conducting sphere, point charge in the presence of a charged insulated conducting sphere, General soln of potential conducting sphere with hemisphere at a diff. potential.	24 Aug. 22 To 15 Sept. 22	Lecture / Blackboard Method, pdf, PPT, Google classroom, e-resource links, youtube video link, inquiring based learning, Problem Solving Method.
III.	Introduction & defn of magnetostatics, Biot & Savart law, differential eqn of magnetostatics, Ampere's law, magnetic induction for a current loop, magnetic field of a localized current distribution, magnetic moment, Force & Torque	16 Sept. 22 To 12 Oct. 22	Blackboard Teaching, Notes, e-books, e-resource, lecture video links. Project based learning,

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Teaching **Lesson Plan**

Class M.Sc. III Sem. (Physics) Paper III Classical Electro-dynamics

Unit	Course Content/ Syllabus Unit Wise	Periods (Week- Month Wise)	Proposed Teaching Method
IV.	and energy of a localized current distribution in a external induction, Boundary conditions on B & H, Uniformly magnetised sphere, magnetised sphere in a external field, permanent magnets.	16 Sept. 22 To 12 Oct. 22	youtube video links, Notes, e-books, ppt, Lecture method, Problem Solving Method,
V.	Time varying fields, Maxwell's Eqn, poynting theorem, conservation law, energy in a magnetic field, vector & scalar potentials, Gauge Transformation, Lorentz gauge, Coulomb gauge, Green's fn for the wave for the wave equation.	13 Oct. 22 To 24 Oct. 22	Teaching Notes, pdf, e-books, e-resources, Google Classroom Blackboard Teaching, PPT, Peer-led team learning
VI.	Lorentz transformation of space & time in four vector form, Eqn of continuity in covariant form, Lorentz conditions in covariant form, Lorentz transformation of E & B, Lorentz force in covariant form, Maxwell Eqn in covariant four	25 Oct. 22 To 9 Nov. 22	Lecture method, Project based learning, Flipped learning e-resources, i.e. Google Classroom inquiring based learning

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Teaching **Lesson Plan**

Class..... M.Sc III Sem. (Physics) Paper III:..... Classical Electrodynamics

Unit	Course Content/ Syllabus Unit Wise	Periods (Week- Month Wise)	Proposed Teaching Method
	vector form, Electromagnetic field tensor, transformation of four potential & four current, Invariance of Electromagnetic fields,	25 Oct. 22 To 9 Nov. 22	PPT, Project based learning Problem solving Method, Google Classroom, e-books resource links lecture method

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Lesson Teaching Work

Proposed work in the month	Date	M.Sc. III Sem. (physics)
M.Sc. III Sem. (physics):— Paper-III: Classical Electrodynamics UNIT-I:— Electric field, Gauss law, differential form of Gauss law, Another Equation of Electric field, (Electrostatics), Boundary condition on $\vec{E}$ & $\vec{D}$, Surface distribution of Charges	18.07.22,	Electric field,
	19.07.22,	Gauss law & its proof
	20.07.22,	Application of Gauss law in Electrostatics
	21.07.22,	Differential form of Gauss law
	22.07.22,	Another Eqn of Electrostatics
	23.07.22,	Boundary condition on $\vec{E}$
	24.07.22,	—
	25.7.22,	Boundary condition on $\vec{D}$
	30.7.22,	Surface distribution of charges
	31.7.22,	—

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Plan

Month July-2022 Akriti

Done			Remark (Teaching Method)
1	1	1	Lecture method, Notes Pdf
1	1	1	Google classroom based learning, Notes
1	1	1	e-pg pathshala, Lecture Method, Notes
1	1	1	youtube video link base learning
1	1	1	lecture method & Green board based learning
1	1	1	Lecture method & e-resour link based learning
SUNDAY			
1	1	1	Google Classroom & Green board-based learning
1	1	1	PPT based learning & lecture method
SUNDAY			

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Lesson

Proposed work in the month	Date	Work M.Sc. ISem. (Physics)	Work M.Sc. III (Physics)
M.Sc. ISem. (Physics):— Paper-II: Classical Mechanics UNIT-III:— Angular momentum Rotational kinetic energy central force motion, D'Alembert principle, Lagrange's Eqn of motion, simple application of Lagrange Eqn formulation, Hamiltonians principle, Method of Lagrange multiplier, Conservation theorem	01.8.22	—	—
	2.8.22	—	State level
	3.8.22	↑	Central force & its characteristic properties
	—	—	—
	4.8.22	—	Surface charge density & its theory
	—	—	—
	5.8.22	—	District level
	6.8.22	—	—
	7.8.22	—	— S —
	8.8.22	NO	Electric dipoles
		Assignment (Physics)	
	9.8.22	—	VISHWA
	10.8.22	—	Laplace Eqn in diff. co-ordinate system
	11.8.22	—	RAKSHA
	12.8.22	H.S. Test	Poisson Eqn in different co-ordinate system
	13.8.22	H.S. Exam.	formal soln of Electro-statics
	14.8.22	—	S — U
	15.8.22	—	INDEP
	16.8.22	—	—
	17.8.22	Rigid body dynamics	Boundary value problem Green's function

Planned

Month..... August-2023 Akriti

Done			Remark (Teaching Method)
Summary	Report 2023" Training at Raipur (C.G)		
—	—		Lecture method, e-book
—	—	—	based learning, problem Solving method
—	—	—	Notes, Google classroom
—	—	—	& lecture method based learning
"SSR-2023" Training at ambikapur, collectorate hall.			
—	—	—	—
—	—	—	—
—	—	—	e-resources based learning, lecture
—	—	—	method & inquiring based learning
—	AADIWASI	—	—
—	—	—	youtube link videos based & Lecture
—	—	—	method learning
—	BANDHAN	—	HOLIDAY
—	—	—	ppt based & e-books
—	—	—	based learning
—	—	—	Google classroom &
—	—	—	lecture method based learning
—	—	—	—
ENDENCE	—	DAY	—
—	—	—	—
—	—	—	Green board based learning & Pdf Notes

Lesson

Proposed work in the month	Date	Work M.Sc. I Sem. (Physics)	Work M.Sc. III Sem. (Physics)
M.Sc. III Sem. (Physics) :— Paper-III : Classical Electrodynamics UNIT-I :— Surface distribution of dipoles, Laplace eqn, poisson eqn, formal solution of Electrostatics, Boundary value problem with Greens function, Electrostatics potential energy, UNIT-II :— Boundary value problem in electrostatics, Method of Electrical image, point charge in the presence of grounded conducting sphere, point charge in the presence of a charged insulated conducting sphere, general solution of potential Energy with in hemisphere at a different potential.	18.9.22	central force	Electro Statics
		motion	potential energy
	19.9.22	———	SHR1 ———
	20.9.22	properties & importance	Boundary problem in
		of central force	Electrostatics
	21.9.22	———	S ——— V
	22.9.22	D'Alembert principle	Method of Electrical image
	23.9.22	Lagrangian formulation	procedure & properties of Method of image
	24.9.22	Appl. of Lagrangian formulation	point charge in the presence of grounded sphere
	25.9.22	Derivation of Lagrange eqn of motion	point charge in the presence of conducting sphere
	26.9.22	Application of Lagrange eqn of motion	point charge presence of charged insulated conducting sphere
	27.9.22	Hamiltonians principle	General soln of potential Energy
	28.9.22	———	S ———
	29.9.22	Hamiltonians principle	Applications of Electrostatics potential Energy
	30.9.22	HARITALIKA	
	31.9.22	Applications Lagrange Method	concepts of source & image charge

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Plan

Month..... August - 2022 Akriti

Done			Remark (Teaching Method)
—	—	—	Green board based learning
—	—	—	& Notes
KRISHNA	—	JANAMASTMI	—
—	—	—	Google classroom based
—	—	—	& problem solving based learning
N	D	A	Y
—	—	—	Project based learning
			& e-resources based learning
—	—	—	ppt based learning
			& Notes
—	—	—	Green board based &
			problem based learning
—	—	—	e-books resource based
			learning & lecture method
—	—	—	Green board based learning
			& problem solving method
—	—	—	youtube video link based
			learning & Notes
V	N	D	A — Y.
—	—	—	Lecture method, e-books
—	—	—	based learning & problem solving based learning
—	TEEJ	VRAT	HOLIDAY
—	—	—	problem solving based learning & inquiry based learning

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Lesson

Proposed work in the month	Date	Work M.Sc. I Sem (Physics)	Work M.Sc. III Sem (Physics)
B.Sc. I Sem. (Physics):— Paper II: Introductory course:— "Mechanics" UNIT-III:— angular momentum of a particle & system of particle, Torque, principle of conservation of angular momentum, Rotation about a fixed axis, moment of inertia theorem of parallel & perpendicular axes, Determination of moment of inertia of a discrete and continuous object (1-D, 2-D & 3-D) (rectangular, cylindrical and spherical) kinetic energy of a rotation motion involving both translation and rotation, M.Sc. I Sem. (Physics):— Paper II: "Classical Mechanics" UNIT-II:— Symmetry properties, Noether's theorem, conservation of linear momentum, angular momentum and conservation of energy as a consequence of homogeneity of space, isotropy of space & homogeneity of time,	01.9.22	Symmetry properties	Introduction of Magnetism
	02.9.22	Noether's Theorem,	Biot & Savart law & its Application
	03.9.22	conservation of linear momentum based on homogeneity of space	Differential form of magneto statics
	04.9.22	—	S —
	05.9.22	Conservation of angular momentum	Ampere's law & its Application
	06.9.22	—	KARVA
	07.9.22	Conservation of Energy as a consequence of homogeneity of time	Magnetic field for a current loop & its application, exercise:
	08.9.22	—	O.D. for
		—	—
	09.9.22	Homogeneity of Space, time & Isotropy of Space	Magnetic field for a localised current distribution
	10.9.22	Generalised momentum & its Applications	Magnetic moment due to LCD
	11.9.22	—	S —
	12.9.22	Legendre Transformation & its importance	Force due to Localised current distribution
	13.9.22	Hamilton's Equation of motion	Torque due to localised current distribution
	14.9.22	Simple Appl. of Hamilton's equation of motion	Energy due to LCD
	15.9.22	cyclic coordinates & Extensive	Localised currents

Plan

Month "September - 2022"

Done B.Sc. I Sem. (Practical)	M.Sc. III Sem. (Practical)	B.Sc. III Sem. (Practical)	Remark (Teaching Method)
General idea of syllabus & college curriculum	III Sem. physics Practical	B.Sc. III Sem. Physics Practical	Green board based learning & problem solving discussion & notes, Green board
Basic concept of rigid body dynamics	physics practical	III Sem. physics Practical	learning & learning based learning,
angular momentum	Physics Practical	I Sem. physics Practical	Lecture, Green board based learning & learning based learning,
of a particle & system particle			
U — M		B	A
—	—	III Sem. physics Practical	Green board based learning, problem solving & learning
—	LOCAL	HOLIDAY	
Magnetic Indu	physics	I Sem. physics	Project based learning
	Practical	Practical	Lec. resource based learning,
Govt. duty at ACB office, Ambikapur			
		B.Sc.	
Relation between Torque & Angular momentum	—	I Sem. physics	Green board based &
		practical	Problem based learning
principle of conservation of angular momentum,	—	first Sem. physics	Green board based learning & Google
		Practical	Class room based learning
U — M		B	A
—	III Sem. physics	B.Sc. III Sem. physics	Problem solving based learning & Peer
—	Practical	Practical	teaching,
—	III Sem. physics	III Sem. physics	Green Board based learning & learning
	Practical	Practical	based learning,
—	III Sem. physics Practical	B.Sc. I Sem. physics Practical	lecture / Green board Note, ppt
Rotation about fixed axis (M.I.)	—	I Sem. physics Practical	Green Board based learning & e-resource based learning

Lesson

Proposed work in the month	Date	Work M.Sc. I Sem (Physics)	Work M.Sc. III Sem (Physics)
UNIT-III: Generalised momentum, Legendre transformation, Hamilton's eqn of motion, simple application of Hamiltonian formulation, cyclic co-ordinate, Routh's procedure, Hamiltonian formulation of Relativistic Mechanics	16.9.22	Routh's	Boundary
		procedure	condition on B
	17.9.22	Applications of Routh's	Boundary condition
		procedure	H
	18.9.22	———	S ———
	19.9.22	Hamilton's formulation	Uniformly magnetised
		of Relativistic	sphere
	20.9.22	Mechanics Basics of	Magnetised sphere in a
		Rigid body dynamics	External Magnetic field
	21.9.22	Angular momentum of Rigid body	Permanent magnets
	22.9.22	———	Govt. duty
	23.9.22	Rotational Kinetic	Applications of permanent
		Energy of a rigid body	magnets
	24.9.22	Euler's	Applications of Uniformly
		Angular & its importance	Magnetised Sphere
	25.9.22	———	S ———
	26.9.22	Euler's eqn of motion	Aplolications of Biot &
		& its Application	Savart law
	27.9.22	Principal axes & principal MI	Ampere's principal law Aplolication
	28.9.22	MI of rigid body	Magnetostatic & its uses
	29.9.22	Torque free motion of rigid body	Applications of current loop
	30.9.22	Moment of Inertia Tensor	Boundary value problems
		& Product for a rigid body	in Electro-statics

M.Sc. III Sem. (Physics): ———

Paper-III: "Classical Electrodynamics"

UNIT-III:- Introduction & definition of magnetostatics, Biot & Savart law, differential form of magnetostatics, Ampere's law, Magnetic induction for a current loop, Magnetic field of a localized current distribution, Magnetic moment, force, & torque, and energy of a localized current distribution in a external Magnetic field, induction, Boundary condition on $\vec{B}$ & $\vec{H}$, uniformly Magnetised sphere, Magnetised sphere in a external field, permanent Magnets.

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Plan

Month..... "September-2020" आकृति

Done B.Sc. I Sem. (Physics)	M.Sc. III Sem. (Practical)	B.Sc. I / III Sem. (Practical)	Remark (Teaching Method)
MI of Theorem	—	I Sem. Physics Practical	Project based learning &
of parallel axes			e-resource based learning
MI of Theorem	—	I Sem. Physics Practical	PPT & pdf based learning method
of perpendicular axes			
U —	N —	D —	A — y —
—	Physics	III Sem. Physics Practical	e-resource & Lecture/
	Practical		green board based learning
—	Physics Practical	III Sem. Physics Practical.	Green Board based
			learning / Lecture Method
—	Physics Practical	I Sem. Physics Practical	Problem solving & Green Board based learning
at ACB	office,	Ambikabar	
K.E due to translation	—	I Sem. Physics Practical	Google classroom & Green Board based learning
& rotation			Methodology
Determination of MI of	—	I Sem. Physics Practical	Problem solving & Green
1-D			Board based learning
U —	N —	D —	A — y —
—	Physics Practical	III Sem. Physics Practical	Green Board / Lecture based learning, & Google
			Classroom based learning
Kinetic Energy of Rotation	Physics Practical	III Sem. Physics Practical	Green Board based / Lecture based learning
—	Physics Practical	I Sem. Physics Practical	Green Board / Lecture method based learning
Newton's Gravitational law	—	I Sem. Physics Practical.	Peer Teaching & Green board / Lecture / Method
Gravitational potential & field Intensity due to Spherical Shell	—	I Sem. Physics Practical	Google classroom & Green Board based learning Method

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Lesson

Proposed work in the month	Date	Work M.Sc. I Sem. (Physics)	Work M.Sc. III Sem. (Physics)
B.Sc. I Sem. (Physics):— Paper-IV: "Mechanics" UNIT-IV:— law of Gravitational, Gravitational potential Energy, Inertial & Gravitational mass, potential & field due to spherical and solid sphere, Two body problem, its reduction to one body problem and its solution, Reduction of angular momentum, kinetic Energy and Total Energy, The energy equation and energy diagram, Keplers law, Satellite in a circular orbit, Geosynchronous orbits	1.10.22	General. of momentum	Time varying field
	02.10.22	S	U
	03.10.22 To 05.10.22		DASH
	06.10.22	Legendre Transformation	Maxwell's Eqn and their physical signif.
	07.10.22	Hamilton's Eqn of motion	Integral & differential form of Maxwell Eqn
	08.10.22	simple application of Hamilton's Eqn of motion	Physical significance of Maxwells Eqn
	09.10.22		S
	10.10.22	cyclic co-ordinate	poynting Theorem
	11.10.22	Routh's procedure	conservation law
M.Sc. I Sem. (Physics):— Paper-II: "Classical Mechanics" UNIT-III:— Generalised momentum, Legendre Transformation, Hamilton's Equation of motion, simple application of Hamiltonian formulation, cyclic co-ordinate, Routh's procedure, Hamilton's formulation of Relativistic Mechanics, Derivation of Hamilton's canonical Eqn from Hamilton's Variational principle, The principle of least action.	12.10.22	Applications of cyclic co-ordinate	Energy in a magnetic field
	13.10.22	Application of Routh's procedure	physical significance of poyntingvector
	14.10.22	Hamiltonian formulation of Relativistic Mechanics	importance & uses of Time varying field
	15.10.22	Derivation of Hamilton's canonical Eqn of motion	Empirical basis of Maxwell's field Eqn
	16.10.22		S
	17.10.22	Applications of Hamilton's canonical Eqn	Derivation of Maxwell's field Eqn

Planned

Month..... "October – 2022" Akriti

Done B.Sc. I sem. Practicals	M.Sc. III Sem. (Practical)	B.Sc. I / III Sem. (Practical)	Remark (Teaching Method)
Newton's Law of Gravitation	—	I Sem. Physics Practical	Project based learning Methodology & Lecture
law N	— D	— A	— Y
A HARA	— HOLIDAY		
Gravitational potential	— Physics Practical —	III Sem. Physics Practical	PPT & pdf based learning Method / Green board based learning method
Energy			
Inertial & Gravitational Mass	—	I Sem. Physics Practical	e-resource & Lecture / Green board based learning
potential & field due to solid	—	I Sem. Physics Practical	Problem solving & Green board based learning Methodology
Sphere			
U —	N —	D —	A — Y —
—	— Physics Practical	III Sem. Physics Practical	google classroom & Green board based learning Methodology
—	Physics Practical	III Sem. Physics Practical	Problem solving & Green board based learning Method
—	Physics Practical	I Sem. Physics Practical	Green board & Lecture based learning Methodology
Gravitation Potential & field due to	—	I Sem. Physics Practical	Peer Teaching & Green board / Lecture learning Methodology
Spherical shell			
Two body problem	—	I Sem. Physics Practical	Google Classroom & Green board / Lecture / Methodology
Reduction to One body problem	—	I Sem. Physics Practical	Problem Solving & Green Board based learning Methodology
U —	N —	D —	A — Y —
Solution of One body problem	Physics Practical	III Sem. Physics practical	Green board & Lecture learning Methodology

Lesson

Proposed work in the month	Date	Work M.Sc I Sem. Physics	M.Sc. III Sem. Physics
M.Sc. III Sem. (Physics):— Paper-III:— "Classical Electrodynamics" UNIT-IV:— Time varying field, Maxwell's Eqn, Poynting theorem, conservation law, Energy in magnetic field, vector and scalar potential, Gauge Transformation Coulomb's Gauge, Green's function for the wave Equation, Lorentz gauge Transformation,	18.10.22	Application of Hamilton	Scalar and vector
		Eqn of motion	potential
	19.10.22	Application of Generalised	Solution of Scalar and
		momentum	vector potential
	20.10.22	———	———
	21.10.22	Application of	Gauge Transformation & its
		Legendre Transformation	importance
	22.10.22	The principle	Physical significance
		of least action	of Gauge Trans.
	23.10.22	———	S ———
	24.10.22 To 26.10.22	———	DIWALI
	27.10.22	Simple Application	Coulomb's Gauge &
		of Hamiltonian canonical Eqn	its Application
	28.10.22	Application of	Lorentz Gauge & its
		Hamiltonian formulation	Application
	29.10.22	Application of	Green's function & its
		Hamiltonian formulation	importance
	30.10.22	———	S ———
	31.10.22	Problems on principle of	Green's fn. for the
		least action	wave Equation

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Month..... " October - 2023 "

Done B.Sc. I Sem. (Physics)	M.Sc. III Sem. (Practical)	B.Sc. I / III Sem. (Practical)	Remark (Teaching Method)
Kinetic Energy in a central motion of field	Physics Practical	III Sem. Physics Practical	Problem Solving & Green Board based learning Methodology
Total Energy in a central field	Physics Practical	I Sem. Physics Practical	e-resource & Lecture/ Green board based learning Methodology
C.L.			
—	—	I Sem. Physics Practical	Google class room & Green Board based learning Methodology
—	—	I Sem. Physics Practical	Problem Solving & Green Board based learning Methodology
U — N — D — A — Y			
HOLIDAY			
The energy Equation in central motion of field	—	I Sem. Physics Practical	e-resource & Green Board based learning Methodology
Energy diagram	—	I Sem. Physics Practical	Peer Teaching & Lecture/ Green Board based learning Methodology
Kepler's law of planetary motion	—	I Sem. Physics Practical	Green Board & Peer Teaching
U — N — D — A — Y			
		III Sem. Physics Practical	
Satellite in circular orbit	Physics Practical		Green board based & e-resource based learning Methodology

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Lesson

Proposed work in the month	Date	Work M.Sc. I Sem. (Physics)	Work M.Sc. III Sem. (Physics)
B.Sc. I Sem. (Physics):— Paper: Mechanics: UNIT-II:— angular momentum of a particle & system of particle, Torque; principle of conservation of angular momentum, Rotational about a fixed axis, moment of inertia, Theorem of parallel & perpendicular axes, Kinetic Energy of a rotational axis, motion involving rotational & Translation UNIT-III: law of Gravitation, Gravitational potential Energy, Gravitational potential field due to spherical shell and solid sphere, two body problem and reduction to one body problem, kepler's law M.Sc. I Sem. (Physics):— Paper-II: Classical Mechanics: UNIT-IV: canonical Transformation, generating function, Lagrange's & poisson's bracket as canonical invariants, Equation of motion in poisson bracket formulation, Intimitesimal contact transformation Liouville's theorem	01.11.22	— STATE —	
	02.11.22		
	03.11.22	Canonical Transformation	Lorentz Transformation in space time form
	04.11.22		
	05.11.22	Generating function	Eqn of continuity in covariant form
		— Test-I (Paper-I)	
	06.11.22	— S	— U
	07.11.22	Lagrange brackets & its prop.	Lorentz conditions covariant form
		— Test-I (Paper-II)	
	08.11.22		GURU
	09.11.22	— Test-I (Paper-III)	
		Poisson's brackets &	Lorentz Transf. of $\vec{E}$ & $\vec{B}$
	10.11.22	properties of Poisson's	Lorentz force in covariant
		bracket — Test-I	form (Paper-IV)
	11.11.22	Lagrange brackets	Maxwell's Eqn in covariant form
		canonical invariant — Test-I	(paper-V)
	12.11.22	poisson bracket as canonical	Electromagnetic field Tensor
		Invariant — Seminar	form (Paper-I)
	13.11.22		S — U
	14.11.22	— Seminar (Paper-I)	
		Eqn in poisson bracket	Transformation of four potential
	15.11.22	Eqn in Lagrange bracket	Transformation of four current
	16.11.22	— Seminar (Paper-II) Intinitesimal contact transformation — Seminar (Paper-II)	Problem based learning

Plan

Month..... " November - 2022

Akriti

Done B.Sc. I sem. Physics	M.Sc. I sem. Physics Practical	B.Sc. I / III sem. Practical	Remark (Teaching Method)
ESTABLISHMENT	DAY	HOLIDAY	
	C. L.		
—	physics Practical	III Sem. Physics Practical	Problem solving & Green Board based learning Methodology
LOCAL	HOLIDAY		
—			e-resource & lecture/ Green board based Methodology
	physics Practical	I Sem. physics Practical	
N	D	A	Y
Angular momentum of a particle & system	—	III Sem. Physics Practical	Google class room & Green Board Methodology
NANAK	JAYANTI	HOLIDAY	
principle of conservation of angular momentum	—	III Sem. Physics Practical	problem solving & Green Board based learning Methodology
Torque & Angular momentum	Physics Practical	III Sem. Physics Practical	Project based learning & e-resource based learning
—	physics Practical	I Sem. Physics Practical	Green board & Inquiry based learning Methodology
—	Physics Practical	I Sem. Physics Practical	Green Board & problem solving based Methodology
N	D	A	Y
Moment of inertia	—	III Sem. Physics Practical	Green Board based & Inquiring based learning Methodology
Theorem of parallel axes	—	III Sem. Physics Practical	Green board & ppt based Methodology
Theorem of perpendicular axes	—	III Sem. Physics Practical	Green Board based learning Methodology

Lesson

Proposed work in the month	Date	M.Sc. II Sem. (Physics)	Work
Hamilton's Jacobi's Eqn & its Application in Simple Harmonic oscillator & Kepler's problem.	17.11.22	Liouville's Theorem	Invariance of Electromagnetic field
		— Seminar	(Paper-II)
	18.11.22	Hamilton Jacobi's	Enquiring based
		Eqn of motion	learning
		— Seminar	(Paper-III)
	19.11.22	H-J method in simple	Enquiring based
		Harmonic	learning
		— Seminar	(Paper-IV)
M.Sc. III Sem: (PHYSICS): —	20.11.22	—	—
Paper IV: Classical Electrodynamics	21.11.22	H-J method in Kepler's	Enquiring based
Unit-V: —		Problem	learning
Lorentz Transformation of Space & time in four vector form, Eqn of continuity in covariant form, Lorentz condition in covariant form, Lorentz transformation of $\vec{E}$ & $\vec{B}$, Lorentz force in covariant form, Maxwell's Eqn in covariant form, Electro-magnetic field Tensor, Transformation of four potential & four current. Invariance of Electro-magnetic field:		— Seminar	(Paper-IV)
	22.11.22	action & angle	Problem based
		Variable	learning
		— Seminar	(Paper-V)
	23.11.22	action & angle in	Problem based learning
		Simple Harmonic	
		Seminar	(Paper-V)
	24.11.22	action & angle in Kepler's	Problem based
		Problem	learning
		Test-II	(Paper-I)
	25.11.22	Problem on H-J method	Problem based learning
		— Test-II	(Paper-II)
	26.11.22	Problem on H-J	
		— Test-II	(Paper-III)
	27.11.22	—	—
	28.11.22	Problem in H-J method	Enquiring based
		— Test-II	(Paper-IV)
	29.11.22	—	—
	30.11.22	Enquiring based	Enquiring based
		learning	learning

Sign. of Teacher

Planned

Akriti

Month..... "November -2022" .....

Done B.Sc. I sem. (Practical)	M.Sc. I sem. (Practical)	B.Sc. I / III Sem. (Practicals)	Remark (Teaching Method)
Kinetic Energy of rotational axis	Physics Practical	III Sem. physics Practical	Green Board based learning & Google class room based learning methodology
—	Physics Practical	I Sem. physics Practical	Green Board based & e-resources based learning methodology
—	Physics Practical	I Sem. Physics Practical	Inquiring based & Green board based learning methodology
U ——	N ——	D —— A	—— Y
motion involving rotation & Translation	—	III Sem. Physics Practical	Project based learning & Green board based learning methodology
law of Gravitation & Gravitational Field & potential	—	III Sem. Physics Practical	Lecture / Green Board learning methodology
Two body problems & reduction to one body	—	III sem. physics practical	Green Board based & Google class based learning Methodology
—	Physics Practical	III Sem. Physics Practical	Problem solving & Inquiring based learning methodology
—	Physics Practical	I Sem. Physics practical	Green Board based & & PPT & Notes based learning
—	Physics Practical	I Sem. physics Practical	Green Board based learning methodology
N ——	D —— A	—— Y	
Keplers laws of planets	—		Green Board & e-resource based learning
cal Exam	at G.R.D	College,	Pamgarh (C.G.) ——
Enquiring based problems & Solving	—	III Sem. Physics practical	Problem Solving based learning methodology

Principal

Lesson

Proposed work in the month	Date	M.Sc. I sem. CPhysics	Work M.Sc. III sem. CPhysics
B.Sc. I Sem. CPHYSICS):— Mechanics: UNIT-IV:— Idea of SHM, Differential Equation and its Solution Kinetic Energy, potential Energy, Total Energy and their time average value, UNIT-V:— Non-inertial frames, frame of references, fictitious force, rotating frame of references, Uniformly rotating frames, Centrifugal force, Coroilis force & its Applications, Impulse, Review of Newton's law of motion, inertial frame of references M.Sc. I Sem. CPHYSICS):— Paper-II: Classical Mechanics:— UNIT-V:— Defn of action & angle variable, Application of action & angle variable in simple harmonic oscillator & Kepler's problem, periodic motion, theory of small oscillation in Lagragian formulation, normal modes, Co-ordinates and its simple applications	1.12.22	Defn of	Transformation of
		action & angle variable	four potential
	2.12.22	Application of	Transformation of
		action & Angle variable	four Current
	3.12.22	simple Harmonic	Electric field
		oscillater	& its imp.
	4.12.22	—— S ——	—— U ——
	5.12.22	Kepler's	Gauss law in
		problem	Electro Stati
	6.12.22	Periodic	Boundary condition
		motion	on $\vec{E}$
	7.12.22	Theory of small	Boundary condition
		oscillation in Lagragian	on $\vec{D}$
	8.12.22	Normal	Scalar
		modes theory	potential
	9.12.22	Normal	Another eqn of
		Co-ordinate theory	Electrostati
	10.12.22	simple Application of Normal	Revision of UNIT-II
	11.12.22	modes	S
	12.12.22	Simple Application of	Revision of UNIT-II
	13.12.22	Normal Co-ordinates	—do—
	14.12.22	—do—	—do—
	15.12.22	—do—	Revision of UNIT-III
	16.12.22	—do—	—do—

Plan

Akriti

Month..."December-2022...

Done B.Sc. I sem. (Physics)	M.Sc. I sem. (Practical)	B.Sc. I / III sem (Practical)	Remark (Teaching Method)
—	Physics Practical	III Sem. Physics Practical	Problem Solving & Green Board based learning Methodology
—	Physics Practical	I Sem. Physics Practical	Google Class room & Green Board based Methodology
—	Physics Practical	I Sem. Physics Practical	e-resource & Lecture/ Green board based Methodology
N	P	A	Y
Idea of Simple harmonic motion	—	III Sem. Physics Practical	e-resource based learning, Methodology
Differential Eqn for the Simple harmonic oscillator	—	III Sem. Physics Practical	Green Board & Inquiring based learning
Solution of SHM	—	III Sem. Physics Practical	Green Board & Problem solving based Methodology
—	Physics Practical	III Sem. Physics Practical	Green Board based learning Methodology
—	Physics Practical	I Sem. Physics Practical	Green Board & PPT & Pdf, e-resource based learning Methodology
—	Physics Practical	I Sem. Physics Practical	Inquiring & problem solving based learning Methodology
V	N	D	A — Y
Kinetic Energy, potential & Total average K.E & P.E of SHM	—	III Sem. Physics Practical	e-resource & Green Board Methodology
Inertial & Non-Inertial frames fictitious force & its Application	—	III Sem. Physics Practical	Google class rooms Green Board based learning
—	Physics Practical	III Sem. Physics Practical	Green Board based learning
—	Physics Practical	III Sem. Physics Practical	Web e-resource based learning
—	Physics	I Sem. Physics	Green Board based learning

Lesson

Proposed work in the month	Date	M.Sc. I Sem. (Physics)	Work M.Sc. III Sem. (Physics)
Exercises on Normal modes & Normal co-ordinate system.	17.12.22	Normal mode & exercises	Revision of UNIT-III
	18.12.22	———	S ———
	19.12.22	Exercises on Action & age variable	Revision of UNIT-III
	20.12.22	Exercises on Normal co-ordinate	—do—
M.Sc. III Sem. (PHYSICS): ——— Paper III: Classical Electrodynamics	21.12.22	Revision of UNIT-IV	—do—
UNIT-II: Revision: Transformation of four potential & four current, Invariance of Electromagnetic field.	22.12.22	Revision of UNIT-III	Revision of UNIT-IV
	23.12.22	Revision of UNIT-II	Revision of UNIT-V
UNIT-I: — Electric field, Gauss law, differential eqn. form of Gauss law, Another Equation of Electrostatics, Scalar potential, Boundary condition on electric field intensity and Electric displacement vector ($\vec{E}$ & $\vec{D}$)	24.12.22 To 26.12.22	———	WINT
	27.12.22	Revision of UNIT-I	Revision of UNIT-V
	28.12.22		
		Semester Exam	
	29.12.22	Dec. 2022	Ex
	30.12.22	(From	28/12/202
		To	
		14/01/2023	
	31.12.22	———	DL A

Sign. of Teacher

Plan

Month..... "December – 2022"

आकृति

Done B.Sc. I Sem. / M.Sc. I Sem. (Practical)	B.Sc. I / III Sem. (Practical)	Remark (Teaching Method)
Physics Practical	I Sem. physics practical	Problem Solving & Inquiring based learning
N	D	A — Y
—	III Sem. physics practical	Green Board & e-resource based learning Methodology
	III Sem. physics Practical	Green Board based learning Methodology
	III Sem. Physics Practical	Problem solving & Inquiring based learning Methodology
Physics Practical	III Sem. Physics Practical	Green Board based learning Methodology
Physics Practical	I Sem. physics practical	e-resources & Inquiring based learning Methodology
(From 23/12/2022 VACATION	26/12/2022)	
	III sem. physics Practical	Problem solving learning Methodology
SEMESTER END EXAM (Dec 2022 Exam From 28/12/2022 To 14/01/2023)	↑ Problem Solving based learning Physics lab (B.Sc. I Sem)	Problem solving & Inquiring based learning practical based Instruments learning Instruments based & Inquiring based learning Methodology
Election Training at	collectorate	Ambikapur (C.G.)

Sign. of HOD

Principal

Lesson

Proposed work in the month	Date	M.Sc. II sem. Physics	Work M.Sc. II
(1) M.Sc. II Sem. (Physics):— Paper-III: Quantum Mechanics-II UNIT-I:— Scattering theory, Scattering amplitude, cross-sections, Transformation from centre of mass to Laboratory frame, Partial wave analysis, optical theorem, phase shift, Scattering length, effective range, Low energy Scattering; Born approximation, and its validity.	01.01.23 To 12.01.23	M.Sc. B.Sc. I	M.Sc. I sem. (Phy From sem. (Phy
	13.01.23	Introduction about	M.Sc. II Se
		Quantum Mechanics	Semester
	14.01.23	Basis of Scattering	End Exam
		theory	(Dec. 202 Exam
	15.01.23	S	U
	16.01.23	Scattering	Basics of
		amplitude	Spectrosco
	17.01.23		
(2) M.Sc. IV Sem. (Physics):— Paper-II:- Spectroscopy UNIT-I:- Microwave Spectroscopy, Pure rotational Spectra of diatomic molecule, polyatomic molecules, Study of Linear molecules, Hyperfine structure and Quadrupole moment of Linear molecules, Structure determination, Stark effect, inversion Spectrum of ammonia.	18.01.23	differential cross	Microwav
		sections	Spectrosc
	19.01.23	Total Scattering	pure rotation
		cross section	Spectra of diatomic
	20.01.23	partial	Practical Exam Phy
		wave Analysis	(Dec. 202 M.Sc. Exam
	21.01.23	Phase	Rigid
		shifts	Rotator (theory
	22.01.23		
	23.01.23	Optical	Theory of poly atom
		theorem	molecule
	24.01.23	significance of optical theorem	study o Linear molecu

Planned

Month..... "January - 2023" Akriti

Done B.Sc. I Sem. (Physics)	M.Sc. II Sem. (Practicals)	B.Sc. I / III Sem. (Practical)	Remark (Teaching Method)
M.Sc. III sem. (Physics) Internal Exam 29.12.2022	—	Semester End Exam 14/01/2023	Exam (Dec. 2022 Exam)
		B.Sc. III sem. (Physics)	Semester End Exam
		B.Sc. I / III Sem. (Internal Exam)	e-resources & Inquiring based learning Methodology
B.Sc. I Sem. (Physics) (Internal Exam)	—		Problem solving & Green Board based Methodology
			Instrument based & Inquiring based learning Methodology
B.Sc. I Sem. (Physics) (Internal Exam) Test - I, II	Physics practical	B.Sc. I Sem. (Physics) Internal Exam Test - I, & II	Green Board learning Methodology
	Physics practical		e-resources & Problem Solving Methodology
	Physics practical		Instrument & Green Board based learning Methodology
SUNDAY			
Angular momentum of system of particles	—	IV Sem. Physics Practical	Instrument & Green Board based learning Methodology
principle of conservation of Angular momentum	—	IV Sem. Physics Practical	Instrument & Green Board based learning, Methodology

Lesson

Proposed work in the month	Date	M.Sc. II sem. Physics	Work
(3) B.Sc. I sem. Physics: Paper: B.Sc. Physics (Mechanics) UNIT-II: Angular momentum of a system of particles, principle of conservation of angular momentum, Theorem of perpendicular axes & parallel axes related to moment of inertia.	26.01.23	significance & Application of partial wave	Structure
	27.01.23		
	28.01.23	scattering length	Quadrupole moment of linear molecule
	29.01.23	—	
	30.01.23	Effective range theory	structure determination
	31.01.23	Laboratory & centre of system (Theory)	Atomic, effect Microwave Spectroscopy
		—	
		—	
		—	

Sign. of Teacher

Plan

Month "January - 2023 Nkriti

Done (B.Sc. I sem. Physics)	M.Sc. II sem. Physics	B.Sc. I/IV sem. Practical	Remark (Teaching Method)
WIC	DAY		
—	Physics Practical	I Sem. Physics Practical	Instrument, Problem Solving & Green Board learning Methodology
—	Physics Practical	I Sem. Physics Practical	Inquiring & Green Board based learning Methodology
VU	NI	DA	Y
Theorem of parallel axes related to M.I	—	IV Sem. Sem. Physics Practical	e-resources, Instrument & Green Board based learning Methodology
Theorem of perpendicular axes related to M.I.	—	IV Sem. Physics Practical	Green Board based & Instrument based learning, Methodology

Principal

Lesson

Proposed work in the month	Date	M.Sc. II Sem. (PHYSICS) Work	M.Sc. (PHYSICS)
M.Sc. II Sem. (PHYSICS):— Paper-III: Quantum Mechanics-II UNIT-II: Perturbation theory Time dependent: perturbation theory, constant & harmonic perturbations, Transition probabilities, Fermi-Golden rule. Adiabatic approximation, Sudden Approximation, The density matrix, Spin density matrix, magnetic resonance, Semiclassical treatment of an atom with electromagnetic radiation	01.02.23	Perturbation theory, Basic theory,	Introduction to spectroscopy (Basics)
	02.02.23	Time dependent perturbation theory	Vibrational spectroscopy of diatomic molecules
	03.02.23	constant perturbation theory	VS of poly atomic molecules
	04.02.23	harmonic perturbation theory	Theory of harmonic oscillator
	05.02.23	Theory of	Stimulated
	06.02.23	Transition probabilities	Theory of anharmonic oscillator
	07.02.23	D.L for	conduc
UNIT-III: Relativistic Quantum Mechanics, Klein-Gordon Equation, Failure, Dirac Equation, Plane wave Solutions, Interpretation of negative energy states, Antiparticles,	08.02.23	Fermi-Golden rule	Theory of Rotational vibrators
	09.02.23	Adiabatic approximation theory	Normal modes of Vibration of poly atomic
	10.02.23	Sudden approximation theory	Experimental Tech. of Infrared Spectroscopy
	11.02.23	The density matrix,	Applications of infrared spectroscopy
	12.02.23	—	Theory of
	13.02.23	spin density matrix	reflectance spectroscopy

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Planned

Month..... February - 2023 .....

आकृति

Done B.Sc. II Sem. (Physics)	M.Sc. I Sem. (Practical) PHYSICS	B.Sc. II / IV Sem. (PHYSICS PRACTICAL)	Remark (Teaching Method)
Preparation learn for	—	IV Sem. Physics Practical	Green Board & e-resource based learning Methodology
Semester Exam			
(Dec. 2022)	Physics	IV Sem. Physics Practical	problem solving & Green Board based
↑	Practical		learning ↑ methodology
B.Sc. I sem.	Physics	—	problem solving & e-resource based
Semester End Exam	Practical		learning ↑ methodology
(Dec. 2022)	physics Practical	—	e-resource & Inquiring
From 03/02/23 To 24/02/23			based learning ↑ methodology
— N	— D	— A	— y —
— do —	—	IV Sem. physics practical	problem solving & Green Board based
↓			learning ↑ methodology
ing physics	Practical	at UV Sanskar college, Latur (C.G.)	
↑			
Semester End	—	IV Sem. physics Practical	Practical based learning &
Exam			Green Board ↑ methodology
(From 03/02/2023	Physics Practical	IV Sem. physics Practical	Instrumental based learning
To			↑ Methodology
24/02/2023)	Physics Practical	—	Inquiring & Green Board based
↓			learning methodology
	Physics Practical	—	Green Board based &
↓			Pdf, ppt based learning ↑ methodology
— N	—	D —	A — y —
Semester End	—	IV Sem. physics Practical	Green Board based
Exam (Dec. 2022)			learning ↑ methodology

Lesson

Proposed work in the month	Date	M.Sc. II Sem. (PHYSICS)	Work M.Sc. (PHYSICS)
M.Sc. IV Sem. (PHYSICS):— Paper. II :— Spectroscopy. UNIT-II: Infrared Spectroscopy, vibrational Spectroscopy of diatomic and simple poly-atomic molecules, Study of linear molecules, Harmonic oscillator, Anharmonic oscillator, Rotational vibrators, Normal modes of vibration of polyatomic molecules, Experimental Techniques, Applications of Infrared Spectroscopy, Reflectance Spectroscopy. UNIT-III: Raman Spectroscopy, Classical and Quantum theory of Raman Scattering, Raman effect and molecular structure, Raman effect and crystal structure, Raman effect in relation to inorganic, organic and physical chemistry	14.02.23	Magnetic	Applications Reflectance
		resonance	Spectroscopy
	15.02.23	Application of	Raman Spectroscopy
		Magnetic resonance	(Basic theory
	16.02.23	Application of	Classical theory of
		Spin density matrix	Raman Scattering
	17.02.23	—— D.L.	for Com
		Application	
	18.02.23	——	MAHA —
	19.02.23	—— S.	—— U ——
	20.02.23	Application of density matrix	Quantum theory of RS
	21.02.23	—— D.L.	for
	22.02.23	—— D.L.	for
	23.02.23	—— D.L.	for Com
	24.02.23	Semi classical theory of an	Raman eff & Molecular
	25.02.23	atom with EMW —do—	structure Crystal Str
	26.02.23	——	S —— U
	27.02.23	—— D.L.	for
	28.02.23	Basics of Relativistic	Raman eff in relat
		Quantum Mechanics	to organic
			Chemistry

Sign. of Teacher

Planned

Month "February - 2023

Akriti

Done	M.Sc. II Sem. CPHYSICS PRACTICAL	B.Sc. II / IV Sem. CPHYSICS PRACTICAL	Remark (Teaching Method)
B.Sc. I Sem Semester Ex	—	IV Sem. Physics Practical	Instrumental & Problem Based learning Methodology
End Exam From 03/08/23 To	Physics Practical	IV Sem. Physics practical	e-resources, Instrumental & Green Board based Methodology
24/08/2023 [Dec. 2022] Exam	Physics Practical	IV Sem. physics practical	Green Board based learning Methodology
ucting, physics Practical at Govt. Girls college, Jan-Feb (C.G)			
SHIV — RATRI —		HOLIDAY	
N —	D —	A —	Y —
Semester End Exam.	—	IV Sem. Physics Practical	Green Board learning
Conducting,	Physics Practical at K. R. Technical college, Ambikapur (C.G)		
conducting,	Physics Practical at Holy cross Women's college, Ambikapur (C.G)		
cting, Physics Practical at Holy Ambikapur (C.G)		cross Womens college,	
semester End Exam (B.Sc. I Sem.)	Physics Practical	—	Green Board & e-resources based learning Methodology
	Physics Practical		
— N. —	D	A	Y
conducting, Bilaspur	physics Practical at D. (C.G)	P. vibra college,	
SEE of B.Sc. I Sem (Semester Break)	—	IV Sem. Physics Practical	Green Board based learning Methodology

Sign. of HOD

Principal

Lesson

Proposed work in the month	Date	M.Sc. II Sem. Physics	Work M.Sc. Physics
M.Sc. II Sem (Physics):— Paper III: Quantum Mechanics-II UNIT-III: Relativistic Quantum Mechanics, Klein-Gordon eqn, Failure, Dirac Equation, Plane wave solution, interpretation of negative energy states, Antiparticles, Spin of electron, Magnetic moment of an electron due to spin, Energy values in a coulomb potential UNIT-IV: Dirac Equation, Covariant form of Dirac Eqn, properties of gamma matrices, Invariance of Dirac Eqn under Lorentz transformation, T-transformation for the Dirac Equation in presence of Electromagnetic field M.Sc. IV sem. (Physics):— Paper II: Spectroscopy UNIT-IV:- NMR and NQR Techniques, Theory of NMR Block Eqn, Steady State Solution of Block equation, Theory of Chemical Shift, Application of NMR to Quantitative measurement Quadrupole Hamiltonian of NQR, Nuclear quadrupole energy levels for axial	01.03.23	Relativistic Quantum	Theory of
		Mechanics	NMR
	02.03.23	Klein-Gordan	Basics of Nuclear
		Equation	Magnetic resonance
	03.03.23	D.L. for	conduct
	04.03.23	Failure of	Bloch
		Dirac Equation	Equation
	05.03.23	———	S ———
	06.03.23	Dirac	Steady state soln of
		Equation	Bloch Eqn
	07.03.23	Plane wave Soln of	Theory of Chemical
		Dirac Equation	shift
	08.03.23	———	———
	09.03.23	interpretation of	Application of NMR to
		Negative energy states	quantitative measurement
	10.03.23	Antiparticle	Quadrupole
		(Theory)	Hamiltonian of NQR
	11.03.23	——— D.L. for	VVPA
	12.03.23	———	———
	13.03.23	Spin of electron	Theory of Nuclear
		(Antiparticle)	Quadrupole Resonance
	14.03.23	Magnetic moment of	NQR energy level for
		e due to spin	axial Symmetric
	15.03.23	Energy value in coulomb potential	NQR energy level for non-axial
	16.03.23		

Plan

Month "March – 2023 आकृति

Done B.Sc. II Sem. (Physics)	M.Sc. II Sem. (Physics Practical)	B.Sc. II / IV Sem. (Physics Practical)	Remark (Teaching Method)
Electric field &	Physics practical	IV Sem. Physics practical	e-resource & Green Board based learning Methodology
Electric potential (Basic theory)			
—	Physics practical	IV Sem. Physics practical	Practical based learning & Green Board based Methodology
Practical Exam at Sai Adarsh College, Ambikapur			
—	Physics practical	II Sem. Physics practical	Instrumental based learning & Green Board learning
— U —	N —	D —	A — y —
Coulomb's law in vector form	—	IV Sem. Physics practical	Green Board based learning Methodology & Inquiring based learning
Electric dipole (Theory & Applications)	—	IV Sem. Physics practical	Green Board based learning & ppt, pdf & e-resource
HOLI		HOLIDAY	
—	Physics practical	IV Sem. Physics practical	Green Board based learning Methodology & e-resources based learning
—	Physics practical	IV Sem. Physics practical	Green Board & e-resources based learning Methodology
Training at Collectorate Hall, Ambikapur			
S — U — N		D —	A — y
Gauss law (Theory)	—	IV Sem. Physics practical	Inquiring & Green Board based learning Methodology
Application of Gauss law	—	IV Sem. Physics Practical	Green Board based learning Methodology
Field due to an infinite line of charge	—	IV Sem. Physics practical	E-resource & Green Board based learning Methodology
	Physics	IV Sem. Physics	

Lesson

Proposed work in the month	Date	M.Sc. II Sem. (Physics)	Work M.Sc. II (Physics)
and non-axial symmetry. Experimental techniques and applications.	17.03.23	covariant form of Dirac Eqn	Experimental techniques of NMR
	18.03.23	BHU	
UNIT-V: ESR and Mossbauer Spectroscopy, Quantum, Mechanical treatment of ESR, Nuclear interaction and hyperfine structure, Relaxation effect, Basic principle of spectrograph, Application of ESR method	19.03.23		
	20.03.23	properties of gamma matrices	Experimental techniques of NQR
	21.03.23	Invariance of Dirac Eqn in Lorentz Transformation	Application of NMR
	22.03.23		
	23.03.23		
B.Sc. II Sem. (Physics): — Paper: DSC — Physics (Electricity & Magnetism)	24.03.23	T — transform-ation of D-Eqn (Theory)	Application of NQR
UNIT-I: Coulomb's law in vacuum expressed in vacuum form of vector, Electric dipole, Gauss law and its Application (1) an infinite line of charge (2) a charged cylindrical conductor (3) an infinite sheet of charge, Dielectric properties of matter, Polarisation vector, Displacement vector, Relation between E, D and P, Gauss law in dielectrics;	25.03.23	T — Transf. of D — Eqn in Electromagnetic field	Basic of ESR
	26.03.23		
	27.03.23	Theory of gamma matrices	Theory of ESR
	28.03.23	Properties of Anti particle	Mossbauer effect (Theory & Basic)
	29.03.23	Theory of Dirac matrices	Quantum Mechanical treat. of ESR
UNIT-II: Biot-Savart law and its Application (1) straight wire (2) circular loop, current loop as a magnetic dipole	30.03.23	RAM	
	31.03.23	Application of Dirac Eqn	Nuclear interactions ESR

Sign. of Teacher

Plan

Month..... "March- 2023" आकृति

Done B.Sc. II sem. Physics Practical	M.Sc. II sem. Physics Practical	B.Sc. II / III sem. Physics Practical	Remark (Teaching Method)
	Physics Practical	II sem. Physics Practical	e- resource based & Green Board based learning methodology
MATA	KARMA	JAYANTI	
SUNIL			
E dual to cylindrical conductor		IV sem. Physics Practical	Inquiring & Green Board based learning methodology
E. dual to infinite sheet of charge		IV sem. Physics Practical	Green Board based learning methodology
SIL.			
	Physics Practical	II sem. Physics Practical	Green Board based learning methodology
	Physics Practical	II sem. Physics Practical	e- resource & Instrumental based learning methodology
S U N		D A Y	
Dielectrics		IV sem. Physics Practical	Inquiring & Green Board learning methodology
Tylor & proof			
polarisation vector (concept & theory)		IV sem. Physics Practical	Instrumental & Green Board based learning methodology
Relation between E and P		IV sem. Physics Practical	Green Board based learning methodology
NAVNI			
	Physics Practical	II sem. Physics Practical	Green Board based learning Methodology

Sign. with Head

Principal

Proposed work in the month	Date	M.Sc. II sem. Work (Physics)	M.Sc. IV sem. (Physics)
M.Sc. II sem. (Physics):— Paper-V: Quantum Mechanics-II UNIT-V: Quantisation of field, Relativistic Lagragian and Hamiltonian of a charged particle in an electromagnetic field, Lagragian and Hamiltonian formulations of field, second Quantisation of Klein-Gordan field, creation & annihilation operators, commutation relation, Quantisation of Dirac field.	01.04.23	Quantisation of field (Basics)	Nuclear magnetic Resonance (Theory)
	02.4.23	———	S ———
	03.04.23	Relativistic Lagragian of charge particle in EMF	NMR Techniques & Applications
	04.04.23	———	MAHA ———
	05.04.23	Relativistic Hamiltonian of a charged particle in EMF	NQR Basics & principle
	06.04.23	Lagragian formulation of field	Quantum theory of NQR
	07.04.23	———	GOOD
	09.4.23	Hamiltonian of a field	Applications of NQR
M.Sc. IV sem. (Physics):— Paper-II: Spectroscopy (Revision) UNIT-II: NMR and NQR Techniques, Theory of NMR. Block equations, Steady state solution of Block equation, Theory of chemical shift, Applications of NMR to Quantitative measurements, Quadrupole Hamiltonian of NQR, Nuclear quadrupol Resonance (Quantum theory),	09.04.23	———	S ——— U
	10.04.23	Second Quantisation of Klein Gordan Eqn	Block equation
	11.04.23	Creation Annihilation operator	Steady State Solution of Block equation
	12.04.23	Commutation Relation for creation operator	Chemical Shift (Theory)
	13.4.23	Commutation relation for Annihilation operator	Quadrupole Hamiltonian of NMR
	14.4.23	———	Dr. ———
	15.4.23		Nuclear Quadrupole moment
	16.4.23	———	S ——— U
	17.4.23	Quantisation	Energy level

Planned

Month..... "April - 2023" Kriti

Done	M.Sc. II Sem. (Physics - Practical)	B.Sc. II (IV Sem.) (Physics Practical)	Remark (Teaching Method)
B.Sc. II Sem. (Physics)			
	Physics Practical	II Sem. Physics Practical	Inquiring & Green Board based learning Methodology
Basics of Electrical Circuits	—	IV Sem. Physics Practical	e-resource & Instrument based learning Methodology
VEER — JAYANTI — HOLIDAY			
Kirchhoff's current law for AC circuits		IV Sem. Physics Practical	Green Board based learning, Methodology
Kirchhoff's voltage law for AC circuits	Physics practical	IV Sem. Physics practical	Instrumental & Green Board based learning Methodology
	FRIDAY		
Applications of KVL & KCL for AC circuits	Physics Practical	II Sem. Physics Practical	e-resource & Green Board based learning Methodology
power consumed by AC circuits	—	IV Sem. Physics Practical	Green Board based learning, Methodology
power factor for different AC circuits	—	IV Sem. Physics practical	e-resource & Instrument based learning Methodology
Electromagnetic Induction	—	IV Sem. Physics Practical	Green Board based learning, Methodology
—	Physics Practical	IV Sem. Physics Practical	Inquiring & Green Board based learning Methodology
AMBEDAKAR —		JAYANTI —	HOLIDAY
—	Physics Practical	II Sem. Physics Practical	Green Board based learning Methodology
Faraday's law	—	IV Sem. Physics	Green board based

Lesson

Proposed work in the month	Date	M.Sc. I sem. (Physics) Work	M.Sc. I (Physics)
Energy level for axial Symmetry, Energy level for non-axial symmetry, Experimental Techniques and applications for NQR and NMR.	18.4.23	Test-I (paper-III)	Test-I (paper-III)
	19.4.23	Test-I (Paper-III)	Test-I (Paper-III)
	20.4.23	Test-I (Paper-V)	Test-I (Paper-V)
	21.4.23	Test-II (Paper-III)	Test-II (paper-III)
B.Sc. I sem. (Physics):— paper-DSC-1 physics: Electricity & Magnetism. UNIT-III: Electrical circuits, Kirchhoff's current & Kirchhoff voltage law for AC circuits, power consumed by an AC circuit, power factor, Electromagnetic induction, Faraday's law, Integral & differential form of Faraday's law, Transformer, UNIT-IV: Network theorem, Thevenin's theorem, Norton's theorem	22.4.23		
	23.4.23		
	24.4.23	Test-II (paper-IV)	Test-II (paper-IV)
	25.4.23	Test-II (paper-V)	Test-II (paper-V)
	26.4.23	Quantization Dirac field	Energy level for non-axial symmetry
	27.4.23		
	28.4.23		
	29.4.23		
	30.4.23		

Sign. of Teacher :

Plan

Month..... "April – 2023" Akriti

B.Sc. II Sem. (Physics)	M.Sc. II Sem. (Physics - Practical)	B.Sc. II / IV Sem. (Physics - Practical)	Remark (Teaching Method)
Integral & diff. form of Faraday's law		IV Sem. Physics Practical	Inquiring & Green Board based learning Methodology
Transformer (construction working)		IV Sem. Physics Practical	Green Board & Instrument based learning Methodology
	Physics Practical	IV Sem. Physics Practical	Green Board & e-resource based learning Methodology
	Physics Practical	II Sem. Physics Practical	PPT, Pdf & e-resource, Green Board based learning Methodology
— U L —	FITTAR	— HOLIDAY	
	S — U — N — D — A — Y		
Network Electrical circuits (Types)		IV Sem. Physics Practical	Green Board based learning Methodology
Thevenin's Theorem & its Applications	—	IV Sem. Physics Practical	e-resource, Green Board based learning Methodology
Norton's Theorem & its Applications	—	IV Sem. Physics Practical	Green Board & e-resource based learning Methodology
C.L.			
	C.L.		
C.L.			
S — U — N		D — A — Y	

Sign. of Head

Principal

Teaching Lesson

Proposed work in the month	Date	M.Sc. II Sem. Physics	M.Sc. II Sem. Physics
M.Sc. II Sem. Physics :— Paper-II : Quantum Mechanics-II (Revision) UNIT-II :	01.5.23	Application of Dirac free fied eqn	Raman Spectroscopy
	02.5.23	Relativistic Quantum Mech. of KG Eqn	Classical theory of Raman Spectrum
	03.5.23	Failure of KG Eqn	Quantum Theory of Raman Scattering
	04.5.23	Dirac Equation	Theory of Raman effect
	05.5.23	——	BUDH ——
	06.5.23	plane wave Soln of Dirac Eqn	Molecular Structure Using Raman effect
	07.5.23	——	——
	8.5.23	—	—
M.Sc. II Sem. Physics :— Paper-II : Spectroscopy (Revision) UNIT-III :	9.5.23	—	—
	10.5.23		
	11.5.23		
	12.5.23		
	13.5.23		
	14.5.23	——	

Plan

Month "May - 2023" Vikrit

Done B.Sc. I sem. Physics	M.Sc. II sem. Physics-Practical	B.Sc. II / IV sem. Physics Practical	Remark (Teaching Method)
Superposition	—	IV Sem. Physics Practical	Green Board & Instrumental based learning, Methodology
Theorem of its Application			
Reciprocity	—	IV Sem. Physics Practical	e-resources & Green Board based learning, Methodology
Theorem & its Application	—		
Maximum power		IV Sem. Physics Practical	Inquiring & Green Board based learning, Methodology
Transfer Theorem	Physics Practical		
—	Physics Practical	IV Sem. Physics Practical	Green Board based learning, Methodology
— PURNIMA		HOLIDAY	
—	Physics Practical	II Sem. Physics Practical	Green Board & e-resources based learning, Methodology
U — N	—	D —	A — Y —

Session : July 2020 - 2021

Vinayak

"DAILY DIARY REGISTER"

Teacher's Name :-

Dr. M. K. Maurya

Assistant Professor (Genetics)

Session :

R. G.

Ambikapur (C.G.)

Date
Page

प्रमाणपत्र

xxxx

यह प्रमाणित किया जाता है कि इस पेंसी में 74 (seventy four) पृष्ठ है।

(Dr. M.K. Maurya)

(DAILY DIARY REGISTER)

Name :— Dr. M. K. Maurya

Post :— Assistant Professor (PHYSICS)

College :— R. G. Govt. P. G. College, Ambikapur (C.G.)

Session :— 2020 – 21

Lession Plan / WORK PLAN
(Proposed Work for October 2020)

(1) M.Sc. III Sem. (PHYSICS) :— Paper-III : Classical Electrodynamics

UNIT-V :—

Lorentz transformation of space and time in four vector forms, Equation of continuity, in co-variant form, Lorentz condition in co-variant form, Lorentz transformations of Electric and magnetic fields Lorentz force in co-variant vector form, Maxwell's Equations in co-variant four vector form, Electromagnetic field Tensor, Transformations of four potentials and four current, Invariance of the Electromagnetic fields

UNIT-IV :—

Time varying fields, Basics of Electromagnetics,

OCTOBER-2020
(WORK DONE)

Date Page

CLASS→ / DATE	M. Sc. III Sem. (PHYSICS) (Theory / Practical)	Remark	Sign. of Teacher
19.10.2020	Lorentz transformation of space and time in four vector form	–	
20.10.2020	Equation of continuity in co-variant form	–	
21.10.2020	Lorentz condition in covariant form	–	
22.10.2020	Lorentz transformations of Electric and magnetic fields	–	
23.10.2020	Lorentz force in Co-variant form	–	
24.10.2020	Maxwell's Equations in Covariant four vector form	–	
25.10.2020	—— S — U — N — D — A — Y ——		
26.10.2020	Electromagnetic field Tensor,	–	
27.10.2020	Transformations of four potentials	–	
28.10.2020	Transformatsans of four currents	–	
29.10.2020	Invariance of the electro-magnetic fields	–	
30.10.2020	—— EID — E — MILAD —— HOLIDAY ——		
31.10.20	Time varying fields & Basics of Electromagnetics	–	

Seen

Teacher

HOD PHYSICS

Principal

PROPOSED WORK / TEACHING PLAN FOR THE MONTH (NOV. 2020)

1.) M.Sc. III Sem. (PHYSICS):— Paper - III :— Classical Electrodynamics

UNIT - IV :—

Maxwell's Equations, poynting theorem, conservation laws, Energy in magnetic field, vector and scalar potentials, Gauge Transformations, Lorentz guage, Coulomb guage, Green's function for the wave Equation.

UNIT - III :— Magnetostatics, introduction and definition, Biot-Savart law, differential Equation of magnetostatics, Ampere's law, Magnetic induction for a current loop, Boundary conditions on $\vec{B}$ and $\vec{H}$. Boundary condition on $\vec{E}$. Boundary conditions on $\vec{D}$.

(Paper - II)

2.) B.Sc. I^st Year (PHYSICS) [CS & MATHS] :— (UNIT-I)

Network, Linear Network, bilateral Network, Basic defn of Network Analysis, Kirchoff's law, Ideal constant-voltage and constant current source, Thevenin theorem, Norton's Theorem, Reciprocity theorem, Maximum power Transfer Theorem, Reloeated integrals of a function of more than one variable, defn of double and Trible integrals

CLASS → / DATE ↓	M.Sc. III Sem. (PHYSICS) (Theory / Practical)	B.Sc. IInd year (PHYSICS) (Theory / Practical)	Remark	Sign. of Teacher
	SUNDAY			
01.11.20	Derivations of Maxwell's Equations	Network, Linear Network, bilateral Network	–	
02.11.20	poynting Theorem	Basic definitions of Two port terminal Network	–	
03.11.20	conservation laws	Kirchoff's law and Excercises on it	–	
04.11.20	Energy in magnetic field	–	–	
05.11.20	vector and scalar potentials	–	–	
06.11.20	Gauge Transformations	–	–	
07.11.20				
	SUNDAY			
08.11.20	Lorentz gauge Transformations	Ideal constant-Voltage and constant-current source	–	
09.11.20	Coulomb gauge Transformation	Thevenin Theorem and Excercises on it	–	
10.11.20	Green's function for the wave Equation	Norton Theorem and its Applications	–	
11.11.20				
12.11.20 To 15.11.20	DIWALI	HOLIDAYS		
16.11.20	Magnetostatics, Basics of Magnet	Superposition theorem & its Applications	–	
17.11.20	Biot & Savarat law and their Appli,	Reciprocity, theorem and its Applications	–	
18.11.20	Differential Equation of magnetostatics	Maximum power Transfer theorem	–	
19.11.20	Amperes law and its Applications	–	–	
20.11.20	Magnetic Induction	–	–	

CLASS → / DATE ↓	M.Sc. IIIrd Sem. (PHYSICS) (Theory / Practical)	B.Sc. Ist year (PHYSICS) (Theory / Practical)	Remark	Sign of Teacher
21.11.20	—	Repeated Integrals of a function of more than one variable	—	
22.11.20	— S — U —	Defn of double and N — D — A — Y	—	
23.11.20	—	Trilole Integrals and Excercises on it.	—	
24.11.20	— C. L —	—	—	
25.11.20	— EKADASHI —	HOLIDAY	—	
26.11.20	Boundary conditions on $\vec{B}$.	—	—	
27.11.20	Boundary conditions on $\vec{H}$	—	—	
28.11.20	Boundary conditions on $\vec{E}$ Electric field intensity	—	—	
29.11.20	— S — U —	N — P — A — Y	—	
30.11.20	— GURU —	NANAK — JAYANTI	—	

Teacher

HOD PHYSICS

Seen

PRINCIPAL

Date
Page

PROPOSED WORK / TEACHING PLAN FOR THE MONTH (DEC. 2020)

(1) M.Sc. III Sem. (Physics):— (Paper-III: Classical Electrodyna-

UNIT-VII:- Boundary condition/ Problems in Electrostatics, Methods of Images, point charge in the presence of a grounded conducting sphere, point charge in the presence of a charged insulated conducting sphere, general Soln for the potential, conducting sphere with hemisphere at different potentials.

UNIT-I:— Electrostatics: Electric field, Gauss law, differential form of Gaussian law and another Equation of Electrostatics.

(2) B.Sc. I^st year (Physics):— ~~(Paper-II)~~: Electricity, Magnetism & Electromagnetic theory (UNIT-I & II)

~~UNIT-I:~~

Gradient of a scalar field, and its geometrical interpretation, divergence and curl of a vector field, and their geometrical interpretation, line, surface and volume integrals, flux of a vector field, Gauss's Divergence theorem, Green's theorem and Stoke's theorem and their physical significance.

UNIT-II:—

Coulomb's law in vaccum expressed in vector forms, Calculations of $\vec{E}$ for simple distributions of charges at rest.

DECEMBER-1

Date
Page

WORK- D

DATE / CLASS	M.Sc. III sem. (PHYSICS) (Theory / Practical)	B.Sc. III year (PHYSICS) (Theory / Practical)
01.12.20	—	—
02.12.20	—	—
03.12.20	Boundary conditions on Electric displacement vector $\vec{D}$	—
04.12.20	Basics of Boundary value problems in Electrostatics	—
05.12.20	Method of Electrical images (Principles, procedure)	—
06.12.20	S U N D	
07.12.20	—	—
08.12.20	—	—
09.12.20	—	—
10.12.20	point charge in the presence of a grounded conducting sphere	—
11.12.20	point charge in the presence of charged insulated conducting sphere	—
12.12.20	General solution of Electric potential	—
13.12.20	S U N	
14.12.20	—	—
15.12.20	—	—
16.12.20	—	—
17.12.20	conducting sphere with hemisphere at different potentials	—
18.12.20		

GURU-PRAKASH DAS

NE)

B.Sc. IInd year (PHYSICS)
(Theory / practical)

	Remark	Sign. of Teacher
Gradient of scalar field and its geometrical interpretation	—	
Divergence and Curl of a vector field	—	
—	—	
—	—	
—	—	
— A — Y —		
Geometrical interpretation of divergence of a vector field	—	
Line, surface and volume integrals and exercise on it	—	
Gause divergence theorem and Applications	—	
—	—	
—	—	
—	—	
— D — A — Y —		
Green's theorem and their Applications	—	
Stokes theorem and their Applications & physical significance	—	
Coulomb's law in vacuum expressed in vector form	—	
—	—	

JAYANTI

12 DECEMB
(WORK-

CLASS→ / DATE ↓	M.Sc. III Sem. (PHYSICS) (Theory / Practical)	Date Page B.Sc. III year (PHYSIC (Theory / Practical)
19/12/2020	Basics of Electrostatics and Electric field	—
20/12/2020	—— S —— U ——	N —— D
21/12/20	—	—
22/12/20	—	—
23.12.20	—	—
24.12.20 To 27.12.20	WINTER (From 24.12.20 To 27.12.2020)	VACATION
28.12.20	—	—
29.12.20	—	—
30.12.20	—	—
31.12.20	Gauss law, differential form of Gaussian law and another Equation of Electrostatics	—

Teacher

B.Sc. Ist year (PHYSICS)
(Theory | Practical)

	Remark	Sign. of Teacher
—	—	
A — Y		
Calculation of Electric field Intensity, E for simple charge distributions of charges at rest	—	
Electric diboles and their Applications	—	
Quadrupole Fields and their Applications.	—	
Electric field intensity, Electric potential and expression for it	—	
Gauss law of Electrostatics	—	
Applications of Gaussian law	—	
Applications of Gaussian law to the solid sphere	—	

HOD PHYSICS

Principal

PROPOSED WORK / TEACHING PLAN FOR THE MONTH (JAN. 202

(1) M.Sc. III Sem. (PHYSICS) (Paper-III : Classical Electrodynamics

UNIT-I:—

Boundary conditions on E and D, surface distribution of charges, and dipoles, Poissons and Laplace Equation, Greens theorem, Formal solutions of electrostatic, Boundary value problem with Greens function, Electro static potential energy)

(2) B.Sc. Ist year (PHYSICS) [paper-II : Electricity, Magnetism & Electromagnetic the

UNIT-II :— Work done on a charge in a electrostatic field as a line integral, conservative nature of the electrostatic field, Relation between Electric potential and electric field torque on a dipole in a uniform electric field and its energy, flux of the electric field. Gauss's law and its Applications : E due to (1) an infinite line of charge, (2) a charged cylindrical conductor (3) an infinite sheet of charge and two parallel charged sheets. capicitors, electrostatic field energy, force per unit area of the surface of a conductor in an electric field

JANUARY - 2021

(WORK-DONE)

DATE	M.Sc. III Sem. (PHYSICS) (Theory / Practical)	B.Sc. IInd year (PHYSICS) (Theory / Practical)	Remark	Sign of Teacher
01.1.21	Boundary condition on Electric field Intensity (E),	—	—	
02.1.21	Boundary condition on Electric displacement vector (D),	—	—	
03.1.21	— S — U — N	— D — A — Y —		
04.1.21	—	Work done on a charge in a electrostatic field as line integral	—	
05.1.21	—	conservative nature of Electrostatic field	—	
06.1.21	—	Relation between E and V	—	
07.1.21	surface distribution of charges	—	—	
08.1.21	surface distribution of dipoles	—	—	
09.1.21	poissons Equation	—	—	
10.1.21	— S — U — N	— D — A — Y —		
11.1.21	—	torque on a dipole in a uniform electric field	—	
12.1.21	—	Energy due to electric dipole	—	
13.1.21	—	flux of the electric field	—	
14.1.21	torque on a dipole in a dipole & Laplace Equation	—	—	
15.1.21	Green's Theorem and its Applications	—	—	
16.1.21	Formal solutions of Electrostatic	—	—	
17.1.21	— S — U — N — D — A — Y —			
18.1.21	— C.L. —			

JANUARY – 2021

(WORK – DONE)

Date
Page

CLASS → / DATE	M.Sc. III Sem. (PHYSICS) (Theory / Practical)	B.Sc. IInd year (PHYSICS) (Theory / Practical)	Remark	Sign. of teacher
19.1.21	—— C.L.	——		
20.1.21	—	E due to an infinite line of charge	—	
21.1.21	Boundary value problem with Green's function	E due to charged cylindrical conductor	—	
22.1.21	Electrostatic potential Energy	—	—	
23.1.21	Problems on Green's function	—	—	
24.1.21	—— S — U — N —— D — A — Y ——			
25.1.21	—	Electric field intensity due to an infinite charged sheet	—	
26.1.21	—— REPUBLIC —— DAY —— HOLIDAY		——	
27.1.21	—	Electric field intensity due to two parallel charged sheet	—	
28.1.21	—— LOCAL	—— HOLIDAY	——	
29.1.21	Applications of surface distribution of charges	—	—	
30.1.21	Applications of poissons and Laplace equations	—	—	
31.1.21	—— S — U — N —— D — A — Y ——			

Seen

Teacher

HOD PHYSICS

PRINCIPAL

PROPOSED WORK FOR THE MONTH (Date FEBRUARY 2021):—
(Teaching Plan)

(1) M.Sc. IIIrd Sem. (Physics):— Paper-II: Nuclear & Particle Physics

UNIT-V:

Concept of Elementary particle, classification of Elementary particle, Quantum Number of Elementary particle, types of interaction between elementary particles, Hadrons and Leptons, symmetry and conservation laws, Strange particles, Elementary ideas of CP and CPT invariance Classification of Hadrons

(2) B.Sc. Ist year (Physics):— Paper-II: Electricity, Magnetism & Electromagnetic theory

UNIT-V: Electromagnetic induction, Faraday's laws, Electromotive force, Integral and differential forms of Faraday's law, Mutual and self inductance, Transformers, energy in a static magnetic field, Maxwell's displacement current, Maxwell's Equations, Electromagnetic field energy density, the wave equation satisfied by $\vec{E}$ and $\vec{B}$, plane electromagnetic waves in vaccum, poynting vector.

(3) B.Sc. IIIrd year (Physics):— Paper-I: Relativity, Quantum Mechanics, Atomic, Molecular & Nuclear Physics

UNIT-I:

Reference system, inertial frames, Galilean invariance and conservation laws, propagation of light, Michelson Morley experiment, Search for ether, postulates for the special theory of Relativity, Lorentz transformation, length contraction, time dilation, velocity addition theorem, variation of mass with velocity, mass-equivalence energy relation

(4) M.Sc. Ist Sem. (Physics):— Paper-II: Classical Mechanics

UNIT-II: Central force motion, D'Alembert principle, Lagrange Equation, simple applications of Lagrange formulation, Hamilton principle, Calculus of variations, Derivation of Lagrange equation from Hamilton's principle, Method of Lagrange's Multipliers, conservation theorems, symmetry properties

(WORK

CLASS → / DATE ↓	M.Sc. III rd Sem. (PHYSICS) (Theory / Practical)	M.Sc. I st Sem. (PHYSICS) (Theory / Practical)	B. ((Th
01.02.21	—	central force motion & their characteristic properties	Ref
02.02.21	—	Applications of central force motion	Gall com
03.02.21	surface distribution of charges	D' Alembert principle & principle of virtual work	&
04.02.21	solution of poisson equations	Lagrange's Equations & their simple Application	
05.02.21	solution of Laplace Equation	Lagragian formulation	
06.02.21	Applications of Laplace and poisan's Equations	simple Applications of Lagragian formulation	
07.02.21	S	U N	
08.02.21	concept of Nuclear Physics & Elementary particles	Hamiltan's principle & Hamiltanian formulation	Mic
09.02.21	Classification of Elementary particles	simple applications of Hamiltanian	Se
10.02.21	Quantum Numbers of Elementary particles	Derivation of Lagrange's Eqn of motion from Hamiltan principles	para of
11.02.21	symmentry & conservation laws	conservation Theorems	
12.02.21			
13.02.21			
14.02.21	S	U N	

Online Refreshers Course in Physics
(From 12/03/2021 To

FEBRUARY — 2021

(WORK DONE)

B.Sc. IIIrd year (PHYSICS) (Theory / Practical)	B.Sc. IInd year (PHYSICS) (Theory / Practical)	Remark	Sign. of Teacher
Reference system, & inertial frames & Basics Galilean Invariance & conservation laws propagation of Light & its importance	Electromagnetic Induction & Faradays law Electromotive force, Integral & differential forms of Faradays law Mutual & self Inductance & their importances	—	
—	—	—	
—	—	—	
—	—	—	
—	D — A — Y	—	
Michelson's Morley Experiment Search for ether	Transformers (construction & working)	—	
postulates of special theory of Relativity	Energy in a static magnetic field	—	
—	Maxwell's Equations (Differential, Integral forms & physical significance)	—	
—	—	—	
—	—	—	
—	D — A — Y	—	

at HRDC University of Lucknow

27/02/2021

WORK-

DATE / CLASS	M.Sc. III Sem. (PHYSICS) (Theory / Practical)	M.Sc. I Sem. (PHYSICS) (Theory / Practical)
15.02.21		
16.02.21		
17.02.21		
	Online Refresher Course in Physics at	
18.02.21	(From 12/03/2021 To	
19.02.21		
20.02.21		
21.02.21	S U N	
22.02.21		
23.02.21		
24.02.21		
	Online Refresher Course in Physics at	
25.02.21	(From 12/03/2021 To	
26.02.21		
27.02.21		
28.02.21	S U	

Teacher

2021
DONE)

B.Sc. III year (Physics) (Theory / Practical)	B.Sc. Ist year (Physics) (Theory / Practical)	Remarks Sign of teach

HRDC, University of Lucknow, Lucknow (U.P.)
27/02/2021)

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HRDC, University of Lucknow, Lucknow (U.P.)
27/02/2021)

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HOD PHYSICS

PRINCIPAL

PROPOSED WORK PLAN FOR THE (Teaching

(1) M.Sc. III rd sem (PHYSICS) :- Paper-II: Nuclear &
Paper-III: Classical Electrodynamics :-

Paper-II UNIT-V:-
Strange particles, Elementary idea of CP and CPT invariance, Classification of Hadrons

~~Paper-III~~
UNIT-III :-
Magnetic induction for a current loop, Magnetic fields of a localised current distribution, Magnetic moment, Force and torque on and energy of a localised current distribution in an external induction, Uniformly magnetised sphere, magnetised sphere in an external fields, permanent Magnets

(2) M.Sc. I st sem. (PHYSICS) :-Paper-II: Classical Mechanics:-

UNIT-III:- Symmetry properties, Lagranges Methods of Multipliers, Calculus of variations, Routh's procedure, Hamiltonian formulation for a Relativistic Mechanic, Derivation of canonical Equation from Hamilton's principles, The principle of least action, Legendre transformation

UNIT-IV:

Canonical transformation, generating function, Types of generating functions, Lagranges brackets and poisson's brackets, Equation of motion in poisson's brackets

MONTH (MARCH - 2021) : ——

Plan)

Particle Physics

(3) B.Sc. IIIrd year (PHYSICS) :- paper - I : Relativity, Quantum Mechanics, Atomic, Molecular & Nuclear Physics :

UNIT-I :- Lorentz transformation, length contraction, time dilation, velocity addition theorem, variation of mass with velocity, mass equivalence Energy relation.

UNIT-III :- Schrödinger's Equation, Postulatory basis of quantum mechanics, operators, expectation values, transition probabilities, application to particles in one and three dimensional boxes, harmonic oscillator in one dimension, reflection at a step potential

(4) B.Sc. IInd year (PHYSICS) :— Paper II : Electricity, Magnetism & Electromagnetic theory : —

UNIT-V :- Electromagnetic field Energy density, two wave Equation satisfied by $\vec{E}$ & $\vec{B}$, plane Electromagnetic waves in vaccum, poynting vector

UNIT-III :- Dielectric constant, polar and Non-polar dieletrics, Dielectrics and Gauss's law, Dielectric polarization, Electric polarization P, Electric displacement vector D, Relation between three electric vectors, Dielectric susceptibility and permittiv

CLASS → / DATE ↓	M.Sc. IIIrd Sem. (PHYSICS) (Theory / Practical)	M.Sc. Ist Sem. (PHYSICS) (Theory / Practical)
01.03.21	Strange particles and its importance	Symmetry properties
02.03.21	Elementary idea of CP and CPT invariance	Method of Lagrange's Multipliers
03.03.21	Classification of Hadrons	Calculas of variations & Excercises on it.
04.03.21	Magnetic Induction for a current loop	Routhes procedure
05.03.21	Magnetic fields of a localized current distribution	Hamiltonian formulation for relativistic Mechanics
06.03.21	Magnetic moment & Force of localised current distribution	Derivation of Hamilton Canonical Equations
07.03.21	——— S ———	U ——— N
08.03.21	Torque on & Energy of localized current distributions	The principle of least action
09.03.21	Uniformly Magnetised sphere	Legendre Transformation
10.03.21	Magnetised sphere in an external fields	Canonical Transformation
11.03.21	——— MAHA - SHIV ———	RATRI ———
12.03.21	Permanent Magnets	generating function
13.03.21	Application of uniformly Magnetised sphere	Types of generating function
14.03.21	——— S ———	U ———
15.03.21	Application of Magnetic induction for a current loop	Lagrange brackets
16.03.21	importance of localized current distributions	properties of Lagrange brackets
17.03.21	Magnetic moments of LCD in external fields	Equation of motion in Lagrange brackets
18.03.21	Torque on LCD in external fields	Poisson's brackets

B.Sc. IIIrd year (Physics) (Theory | Practical)	B.Sc. IInd year (Physics) (Theory | Practical)	Remark	Sign of Teacher
Lorentz transformation, Length contraction, Time dilation, Velocity Addition theorem	Electromagnetic field Energy density, wave equation satisfied by $\vec{E}$ and $\vec{B}$	–	
–	plane Electromagnetic wave in vaccume	–	
–	–	–	
–	–	–	
–	–	–	
D	A	Y	
variation of mass with velocity, Mass equivalence Energy relation	poynting theorem & poynting vector	–	
–	Dielectric constant, polar & Non-polar dielectric	–	
	Dielectrics & Gauss's law and their importance	–	
HOLIDAY			
–	–	–	
–	–	–	
–	–	–	
N D	A	Y	
Schrödinger's Equation (Time dependent & independent) postulatory basis of Quantum Mechanics	Dielectric polarisation & Electric polarisation vector P	–	
	Electric displacement vector D	–	
Application to particles in one dimensional box,	Relation between three electric vectors	–	
	–	–	

WORK —

Date

CLASS → / DATE ↓	M.Sc. IIIrd Sem. (Physics) (Theory / practical)	M.Sc. Ist Sem. (Physics) (Theory / practical)
19.03.21	Energy of LCD in a External fields	properties of poisson's brackets
20.03.21	Applications of magnetised sphere in external fields	Invariant of poisson's bracket under canonical transformations
21.03.21	—— S ——	U —— N
22.03.21	Applications of Permanent Magnets	Equation of motion in Lagrange's bracket Applications
23.03.21	Characteristic properties of Permanent magnet	conservation theorem related to homogeneity of space
24.03.21	Applications of magnetic moments	conservation of angular momentum
25.03.21	Revision of Electrical image of method	Rigid body dynamics
26.03.21	magnetic induction for a current loop	components of angular momentum of a rigid b
27.03.21	Laplace equation in different Co-ordinate system	moment of Inertia Tensor
28.03.21	—— S ——	U —— N
29.03.21	—— HOLI ——	—— HOLI
30.03.21	Poisson's equation in different Co-ordinate system	moment of inertia of a rigid body
31.03.21	Green's function & its Applications	Rotational kinetic Energy of rigid body

Teacher

B.Sc. IIIrd year (PHYSICS) (Theory / Practical)	B.Sc. Ist year (PHYSICS) (Theory / Practical)	Remark
-	-	-
-	-	-
D	A	Y
Dielectric susceptibility, Three dimensional boxes, harmonic oscillator in one dimensional	permittivity, Applications of complex numbers in solving AC circuit & complex Number	-
-	power consumed in a A.C. circuit & power factor	-
-	-	-
-	-	-
-	-	-
D	A	Y
DAY		
reflection at step potential	Series Resonant circuit & Resonance condition	-
-	parallel Resonant circuit	-
	Difference betn series & parallel Resonance circuit.	

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HOD PHYSICS

PRINCIPAL

(WORK-

(1) M.Sc. IIIrd Sem. (PHYSICS):— Paper-V (Tribal studies)

UNIT-I:— Meaning, Nature, Need & Importance of tribal studies, Meaning, Definition & Characteristics of Tribe, Caste & Race.

UNIT-II:— Population composition of tribal, Classification of Indian Tribe - Racial, Lingual, Geographical, Cultural

UNIT-III:— Some major tribes in india,- Santhal, Khasi, Munda, Bhils,
Some Major Tribes in Central India,- Gond, Baiga, Bharia, Korkus.
Literacy, poverty, indebtness, Unemployment, migration, & Exploitation Environmental & Degradation

(2) M.Sc. Ist Sem. (PHYSICS) :— Paper-II (Classical Mechanics):-

UNIT-I:—
Rigid body dynamics, Angular momentum, Rotational Kinetic Energy, Moment of Inertia of a rigid body, principal moment of Inertia and principal axes, moment of Inertia Tensor, Euler's angles, Euler's Equations of motion of a rigid body, Torque free motion of a rigid body.

UNIT-II:— Definition of action and angle variables, Applications of action and angle variables, in simple harmonic oscillator and Kepler's problems, Periodic motion, theory of small oscillations in Lagrangian formulation, normal modes and co-ordinates and its simple applications

FOR THE MONTH (APRIL-2024):

PLAN)

3) B.Sc. I^st year (PHYSICS) :— Paper - II (Electricity, Magnetism & Electromagnetic theory):—

UNIT-III :— polarizability and Mechanism of polarisation, Lorentz local field, Clausius Massotti Equation, Debye equation, Ferroelectric and piezo, paraelectric dielectrics, Steady current, current density, non-steady current and continuity Equation, rise and decay of current in LR, CR and LCR Circuits, decay constants, AC circuits, complex Numbers, and their applications in solving AC circuit problems, complex impedance and reactance, series and parallel resonance, Q-factor, power consumed by an AC circuit, power factor

UNIT-IV :—

Magnetisation current and Magnetization vector (q, three magnetic vectors and their relationship, Magnetic permeability and susceptibility, Diamagnetic, paramagnetic and Ferromagnetic substances. B.H. curve, cycle of magnetization

CLASS → / DATE ↓	M.Sc. III Sem. (PHYSICS) (Theory / Practical)	M.Sc. IV Sem. (Theory)
01.04.21	Meaning of Tribal & their Nature	Rigid bod of angul
02.04.21	—— GOOD ——	—— FRID
03.04.21	Need & importance of Tribal Studies	Rotational of a
04.04.21	—— S —— U ——	N ——
05.04.21	Meaning of Tribe & Definition of Tribe	Moment of body
06.04.21	Characteristics of Tribes	princip & prin
07.04.21	—— MATA ——	KARMA ——
08.04.21	Caste and its importance	Moment of
09.04.21	Caste-Race & its importance	Euler's signifi
10.04.21	population composition of Tribal	Euler's Equ of a rigid
11.04.21	—— S —— U ——	N
12.04.21	Classification of Indian Tribe - Racial	Torque & body
13.04.21	Lingual & its importance	Definition angle
14.04.21	—— Dr.	AMBEDAKAR ——
15.04.21	Classification of Tribes on the basis of Geographical	Applicatio angle
16.04.21	Cultural activities of Tribal	Application angle variable
17.04.21	Some mayor tribes in India	Application variable in
18.04.21	—— S —— U ——	N ——
19.04.21	Santhal	periodic

dynamics, comp. momentum	—	—	
	HOLIDAY		
Kinetic Energy rigid body	—	—	
D — A — Y			
inertia of rigid	Mechanism of polarisation & polarizability	—	
moment of inertia pal axes	Lorentz local field & its Derivation	—	
JAYANTI			
Inertia Tensor	—	—	
Angles and its ce	—	—	
tion of motion body	—	—	
D — A — Y			
motion of rigid	Clasius Mossotti Equation	—	
of action and variable	Debye equation	—	
JAYANTI			
of action and variable	Ferroelectrics & its characteristic properties	—	
of action and harmonic oscillator	—	—	
action & angle Kepler's problems	—	—	
D — A — Y			
Oscillations	Piezoelectricity and its characteristic properties	—	

CLASS → / DATE ↓	M.Sc. IIIrd Sem. (PHYSICS) (Theory / Practical)	M.Sc. IInd Sem. (Theory)
20.04.21	Khasi Tribes	Theory of small in Lagrangia
21.04.21	——— Ram – Navmi ———	
22.04.21	Munda Tribes	Applications of small oscillatio
23.04.21	Bhils Tribes	——— do ———
24.04.21	illiteracy in Indian Tribes	normal modes
25.04.21	——— S ——— U ——— N ———	
26.04.21	poverty in Tribes	simple example modes of
27.04.21	indebtness in Tribes	Applications of co-ordinates &
28.04.21	Unemployment in Tribes & its cause	——— do ———
29.04.21	Migration & exploitation in Tribes	Examples on small oscilla
30.04.21	Environmental degradation in Tribes	Examples on and normal

APRIL-2021 (WORK-DONE)

B.Sc. Ist year (Physics) (Theory / Practical)

(Physics) (practical)

		Remark	Sign of Teacher
oscillations formulation	parallel electric ↑ material & effect and characteristic properties	—	
	Halliday		
theory of	—	—	
	—	—	
& co-ordinate	—	—	
	D —— A —— Y		
of Normal vibrations	Steady current, current density, non-steady current & continuity Equation	—	
Normal mode	rise and decay of current in LR, CR circuits	—	
	rise and decay of current in LCR circuit	—	
theory of	decay constants, Ac circuits & complex numbers,	—	
Normal mode Co-ordinates	Applications of complex numbers in solving AC circuit problems	—	

HOD PHYSICS

PRINCIPAL

Page No.
Date

प्रमाण पत्र

यह प्रमाणित किया जाता है कि इस पँक्ति में 90 (Ninety) पृष्ठ है।

(Dr. M. K. Maurya)

Signature.....

Page No.
Date

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"DAILY DIARY"

xxx

Name: Dr. Mahendra Kumar Maurya

Subject: Physics

Post: Assistant Professor (PHYSICS)

Session: "2021-22"

College: Rajeev Gandhi Govt. P.G. College, Ambikapur - 497001, (Chhattisgarh)

Signature.....

Teaching Plan

(Department : Physics)

Class:— "B.Sc. I Semester (Physics)"

Paper:—I ("Mechanics, Oscillations & Properties of Matter")

Units	Course Content	Periods	Teaching Methods
I.	Cartesian, cylindrical & spherical co-ordinate system, velocity & acceleration in different co-ordinate system	26–30 October 2021 1,1–13 Nov. 2021	Black Board Teaching, Google Classroom, youtube link Black board
III.	Bifilar oscillations, Helmholtz resonator, LC Circuit, vibration of a magnet, oscillations of two masses connected by a spring, superposition of two simple harmonic motions of the same frequency, Lissajous figures, damped harmonic oscillator, case of different frequencies, power dissipation, quality factor, examples, driven (forced) harmonic oscillator, transient & steady states, power absorption, Resonance	18, 20 Nov. 2021 25–27 Nov. 2021 2–4 Dec. 2021 6–11 Dec 2021 16–19 Dec. 2021 22, 23 Dec. 2021 29, 30–31 Dec. 2021	Teaching Blackboard Teaching Black Board Teaching Notes, Pdf, Black board Teaching Google class room, Youtube links Black Board Teaching Black Board Teaching Notes, Pdf, Black, Board Teaching Youtube link Notes, Pdf, Black Board Teaching, Google class-room, Youtube link, Pdf

Signature.....

Units	Course Content	Period	Teaching Method
V.	Elasticity : Strain & Stress, elastic limit, Hook's law Modulus of rigidity, poisson's ratio, Bulk modulus, relation connecting different elastic constants, Twisting couple of a cylinder (solid & hollow), Bending moment, Cantilever, Young modulus by bending of beam, viscosity : Poiseulle's Eqn of liquid flow through a narrow tube, Eqn of continuity, Euler's Eqn, Bernoulli's theorem, viscous fluids, streamline & turbulent flow, poiseulle's law, Coeff. of viscosity, Stokes' law, surface tension & Molecular interpretation of surface tension, surface energy, Angle of contact, Wetting.	1, Dec Jan. 2022 6-8 Jan. 2022 13-15 Jan. 2022 20-22 Jan. 2022 27-29 Jan. 2022 3-5 Feb. 2022 10-12 Feb. 2022	Black Board Teaching Notes, Black Board Teaching Google Class Youtube Live Black Board Teaching Google Class Notes, Black Board Teaching Youtube, Pdf, PPT Black Board Teaching Google Class Youtube Live Black Board Teaching Notes, Black Board Teaching Youtube Live Pdf, PPT, Google Class room, Not

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10/2/22
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Teaching Plan

(Department: Physics)

Class:- "M.Sc. I Semester (Physics)"

Paper:- II "C" "Classical Mechanics")

Units	Periods Course Content	Period	Teaching Methods
I.	Angular momentum, Rotational kinetic Energy, moment of inertia of a rigid body, principal moment of inertia & principal axes, M.I. tensor Euler's angles, Euler's Eqn of motion Torque free motion of a rigid body.	26-27 Oct. 2021 28-30 Oct. 2021 1, 2 Nov. 2021 8-13 Nov. 2021 16 Nov. 2021	Black Board Teaching, Youtube link Black Board Teaching, Pdf, Book Pdf PPT, Youtube link Black Board Teaching,
II.	Central force motion, D'Alembert principle, & Lagrange's Equation, Simple Appl. of Lagragian formulation, Hamilton's principle, Method of Lagrange's Multipliers, Conservation theorems & symmetry properties, Noether's theorem, Conservation of Energy, Linear momentum & angular momentum as a consequences of homogeneity of time & space and isotropy of space.	17, 18, 20 Nov. 2021 22-27 Nov. 2021 29, 30 Nov. 2021 1-4 Dec. 2021 6-8 Dec. 2021	Notes, Pdf, Youtube link Video Black Board Teaching, Youtube link Pdf, PPT, Google class room Black Board Teaching Black Board Teaching, Black Board Teaching
III.	Generalised momentum, Legendre trans formation, Hamilton's Eqn of motion, Simple Appl. of Hamilton's formulation, cyclic co-ordinate Routh's procedure, Hamilton's formulation of Relativistic Mechanics, Derivation of Hamilton's Canonical Eqn from Hamilton's Variational principle, The principle of least action.	9-17 Dec. 2021 20-23 Dec. 2021	Black Board Teaching, Pdf, PPT, Youtube link Google class room Black Board Teaching, Youtube link, Pdf, PPT, e-resources, e-bg pathak, Google class room

Signature.....

Units	Course Content	Period	Teaching Method
IV.	Canonical transformation, generating functions, types of generating function, Lagrange's & poisson bracket as canonical invariants, Eqn of motion in poisson bracket formulation, Infinitesimal Contact Transformation, Liouville's theorem, Hamilton-Jacobi Eqn & its Appl. in simple harmonic oscillator and Kepler's problem.	28-31 Dec. 2021 1-8 Jan. 2022 10-15 Jan 2022 17-22 Jan. 2022	Black Board Teaching Pdf / PPT Black Board Teaching, Pdf e-pg pathlab Google classroom Notes, Black Board Teaching, Pdf PPT, Youtube links Notes,
V.	Defn of action & angle variable, Applications of action & angle variables in simple harmonic oscillator and Kepler's problem, periodic motion, theory of small oscillations in Lagragian formulation, normal modes and co-ordinates and its simple Applications.	24-31 Jan. 2022	Black Board Teaching, Pdf, PPT, e-PG pathshala, Youtube Video links, Google Classroom Notes,

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10/2/22

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Teaching Plan

Department: Physics

Class: "M.Sc. III Sem. (Physics)"

Page No.
Date

Paper :- III C "Classical Electrodynamics"

Units	course content	Period	Teaching Method
V.	Lorentz transformation of space & time in four vector form, Equation of continuity in covariant form, Lorentz conditions in Co-variant form, Lorentz transformations of $\vec{E}$ and $\vec{B}$, Lorentz force in covariant form, Maxwell's eqn in covariant 4 vector form, Electromagnetic field tensor, transformation of 4 potential & four currents, Invariance of the EM fields.	22-30 Nov. 2021 / 1-10 Dec. 2021 / 13-17 Dec. 2021	Black Board Teaching, Pdf, Notes, PPT, Google Classroom, e-PG pathshala, Youtube video links, Blackboard, Teaching, Pdf, Notes, PPT, Google Classroom, Youtube video links, Notes, Black Board Teaching, Notes, Pdf,
I.	Electric field, Gauss law, differential form of Gaussian law, Another Eqn of Electro statics, Scalar potential, Boundary conditions on $\vec{E}$ & $\vec{D}$, surface distribution of charges & dipoles, Poisson & Laplace Eqn, Green's theorem, Formal Solution of electrostatics, Boundary value problems with Green's function, Electrostatic potential Energy,	20-23 Dec. 2021 / 28-31 Dec. 2021	Google Classroom, e-resources, Black Board Teaching, e-resources, Pdf Notes, Black Board Teaching, Pdf, Notes, e-resources, Google classroom
II.	Boundary value problems in Electrostatics, Methods of images, point charge in the presence of a grounded conducting sphere, point charge in the presence of a charged insulated conducting sphere, Gen. Soln for the potential conducting sphere with hemi-	1-8 Jan. 2022	Black Board Teaching, Notes, e-resources, PPT, Google Classroom, Youtube video link, e-PG pathshala,

Signature

Units	Course content	Period	Teaching Method
	spheres at a different potential	10–15 Jan. 2022	Black Board Teaching, Notes, e-resources, Youtube video link
III.	Introduction & defn of magnetostatic, Biot & Savart law, the diff. Eqn of magnetostatics, Ampere's law, magnetic induction for a current loop, Magnetic field($\vec{B}$) of a localised current distribution, magnetic moment, Force & torque on & energy of a localised current distribution in a External induction, Boundary conditions on $\vec{B}$ & $\vec{H}$, Uniformly magnetised sphere, magnetised sphere in an external fields, permanent magnets.	17–22 Jan. 2022	Black Board Teaching, e-resources, PPT, Notes, Pdf, Google class rooms,
		24–29 Jan. 2022	Black Board Teaching Pdf, Notes, e-resources
		31 Jan. 2022	Black Board Teaching
IV.	Time varying fieds, Maxwell's Eqn, Poynting theorem, conservation law, Energy in a magnetic field, Vector & Scalar potentials, Gauge transformations, Lorentz gauge, Coulomb gauge, Green's fn for the wave equation	1–5 Feb. 2022	Notes, Pdf, PPT, Black Board Teaching
		7–12 Feb. 2022	Black Board Teaching, Notes, Pdf, e-resources, e-pg pathshala, Google class room, PPT

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Signature
10/2/22
Principal

Name Of Teacher:— Dr. M. K. Maurya

Month:— October 2021

Date	Proposed Work (Syllabus taught of month)
	M.Sc. I Sem.:— Paper-I ("Classical Mechanics")
26.10.21	UNIT-I:— Rigid body dynamics, Angular momentum, Rotational Kinetic energy, moment of inertia
27.10.21	
28.10.21	
29.10.21	
	B.Sc. I Sem.: Paper-I ("Mechanics, Oscillations & Properties of Matter")
30.10.21	UNIT-I:— Cartesian co-ordinate system, Cylindrical co-ordinate system, Spherical co-ordinate system, Derivation of velocity & Acceleration in cartesian co-ordinate system

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Page No.
Date

WORK DONE

M.Sc. I Sem. (Physics) Matter Taught Teaching Methods	B.Sc. I Sem. (Physics) Matter Taught Teaching Methods	Remark completed/ incompleted
Brief idea about the syllabus		
Rigid body dynamics & properties of Rigid body	Brief idea about the syllabus & pattern of Examinations	completed Notes, Pdf, (Black board Teaching)
Angular momentum for a rigid body Physics Practical	Scheme of Marks of for semester exam	completed Notes, Pdf, (Black board Teaching)
Rotational Kinetic energy for a rigid body	Cartesian co-ordinate system & its example	e-resources, completed (Black board Teaching)
Applications of Rational Kinetic energy Physics Practical	cylindrical co-ordinate system & its example	completed ppt, (Black board Teaching) e-resources, Notes, Pdf,
Moment of Inertia for a rigid body Physics Practical	Spherical co-ordinate system & its example	completed (Black board Teaching) e-resources Notes, Pdf, Google class room PPS) Youtube video links

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Principal

Signature

Name of Teacher: — Dr. M.K. Maurya
Month : — November - 2021

Date	Proposed Work, (Syllabus taught of month)
01.11.21	M.Sc. III Sem: Paper - III (Classical Electrodynamics)
02.11.21	Unit-IV :— Lorentz transformation of space and time in four vector form, Four vector, Equation of
03.11.21 To 6.11.21	continuity in co-variant form, Lorentz condition in co-variant
7.11.21	form, Lorentz force in
8.11.21	co-variant form.
9.11.21	
10.11.21	
11.11.21	
12.11.21	
	M.Sc. I Sem:- Paper-II (Classical Mechanics)
13.11.21	UNIT-I:— Principal moments of
14.11.21	inertia and principal axes, moments of inertia tensor,
15.11.21	Euler's angles, Euler's equations
16.11.21	of motion of a rigid body,
17.11.21	torque free motion of a rigid body,
18.11.21	UNIT-II :—
19.11.21	Central force motion, D'Alembert's
20.11.21	principle, and Lagrange's equation, simple applications of Lagrangian formulation

M.Sc. III Sem. (Physics) Teaching Teachers

Preparation, Issue & Correction Exam. Forms

(M.Sc. II & IV Sem. Physics)

Semester Exam 2021 Starts (From 12.11.2021 To 18.11.2021)

M.Sc. II & IV Semester (Physics)

GURU

Semester Break for M.Sc. III Sem. (Physics)

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Page No. SUNDAY
Date

WORK- DONE

M.Sc. I Sem. (Physics) Matter Taught Teaching Method	B.Sc. I Sem. (Physics) Matter Taught Teaching Method	Remark Completed/ incompleted
Principal moments of Inertia & Physics Practical	—	completed (Notes, PPT (Black board Teaching)
Principle axes for a rigid body & its exercise	—	Completed (Black board Teaching e-resources)
DIWALI (From 03.11.2021	HOLIDAYS To 06.11.2021)	
— N — D — A — Y —		
Moments of inertia Tensor for a rigid body	—	completed (Black Board Teaching)
Applications of moments of inertia for a rigid body	—	completed (Black board Teaching)
CHHATH	HOLIDAY	
Euler's Angles & its importances in Physics	Expression of velocity & Acceleration in Cartesian Co-ordinate system	Completed e-resources (Black board Teaching)
Applications of Euler's Angles, Physics Practical	— do —	completed PPT, Pdf (Black board Teaching)
Euler's equations of motion of a rigid body	Expression of velocity & acceleration in cylindrical Co-ordinate system — do —	completed (Notes, Black board Teaching)
U — N	D — A — Y	
KARTIK	EKADASHI — HOLIDAY	
Torque free motion of a rigid body	—	completed (e-resources) Black Board Teaching)
central force motion & its characteristic properties,	—	completed (Notes, Pdf, PPT, Google class)
D' Alembert- principle & its Applications	Bifiliar oscillation & its Applications	completed (Notes, Pdf, PPT, e-resources)
NANAK	JAYANTI — HOLIDAY	Google classroom
Lagrange's Equation of motion & its Applications	Helmholtz resonater & LC circuits & their exercises	completed (Notes, Pdf, e-resources Youtube video link)

Signature

Name of Teacher:— Dr. M.K. Maurya

Month : — November – 2021

LESSON PLANNER

Date	Proposed Work (Syllabus Taught of month)	M.Sc. III Sem. (Physics) Matter taught Teaching Method
		S
21.11.21	Hamilton's principle,	No Class
22.11.21	Calculus of variations,	Lorentz transformation
23.11.21		in space & time inva
		Brief idea about
24.11.21	B.Sc. I Sem. (Physics): Paper-I (Mechanics, oscillations & properties of matter)	Four vector formu & its importance
	UNIT-I:	
25.11.21	Derivation of expression for	Equation of conti
	velocity & Acceleration in	in co-variance f
26.11.21	Cartesian, cylindrical & spherical	Lorentz condit
	co-ordinate systems,	co-variant form
27.11.21		Lorentz force
		co-variant for
28.11.21		S
29.11.21		Application of Lore
		force in vector
30.11.21		Charge & volume
		four vector form
		Semester Prac
		Exam – 2021
		(M.Sc. II Sem.

Sign. of Teacher

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	M.Sc. I Sem. (Physics) Matter Taught Teaching Method	B.Sc. I sem. (Physics) Matter Taught Teaching Method	Remark (completed/ Incompleted)
	U — N	D — A — J	
on	Simple applications of Lagragian formulation	—	completed (Black Board Teaching / Notes,
vector form	Hamilton's principle	—	completed
A vector tion	Calculus of variation	—	completed
			Ce-resources, Google class room)
			Ce-pdf Notes
nity rm	Application of calculus of variation	Superposition of oscillation of two SHM	completed
			(Notes, ppt, pdf)
im	Method of Lagranges Multipliers	vibration of Magnet	completed
			(Notes, pdf Black Bar Teaching)
im m	Applications of Lagranges Multipliers	oscillation of two masses connected by spring	completed (Black Board Teaching)
	U — N — D	A — J	
z space	Applications of Lagranges Multipliers	—	completed
			Ce-resources BK; PPT)
im ical	conservation theorem & its importance	—	completed
			(Notes, Pdf Black Board Teaching)
)	M.Sc. semester (M.Sc. II & IV semester)	Practical Exam-2021	

Sign. of HOD

Signature
Principal

Name of Teacher :— Dr. M.K. Maurya
Month :— December – 2021

LESSON

Date	Proposed Work (Syllabus Taught of Month)	M.Sc. III Sem. (Physics) Matter Taught Teaching Method
1.12.21	M.Sc. III Sem. Paper-III:— UNIT-I:— Lorentz transformation of E & B, Maxwell's Eqn	Lorentz transform of Electric field & Mag
2.12.21	in covariant 4form, Electromagnetic field tensor,	Maxwell's Eqn in cov form
3.12.21	transformation of 4-potential & 4-current, Invariance	Electromagnetic fi Tensor
4.12.21	EM field, UNIT-II:— Electric field,	Transformation of f Electromagnetic poten
5.12.21	Gauss law, differential	— S — U —
	form of Gausian law;	Transformation of fou
6.12.21	Another Eqn of Electro-	current vector
	statics, scalar potential,	Invariance of Elec
7.12.21	Boundary condition on	magnetic field
	E & D, surface distribution	Electric field & its
8.12.21	of charges, & dipoles, poisson	importance of E
	& Laplace Eqn, Formal soln	Gauss law and its
9.12.21	of Electrostatics, Boundary	Applications
	value problem with Green fn	Differential form
10.12.21	M.Sc. I Sem. Paper-II:—	Gauss law
	UNIT-II:— Symmetry properties,	Another Equations
11.12.21	Noether's theorem, Conservation	Electrostatics & its
	of Energy, Linear momentum	importance
12.12.21	& Angular momentum as	— S — U
13.12.21	a consequences of homogeneity	Scalar potential
	of time, Space & isotropy of	
14.12.21	Space,	
	UNIT-III:— Generalised	Boundary conditions
15.12.21	momentum, Legendre	Electric field intensity
	transformation, Hamilton's	Boundary condition
	Eqn of motion,	Electric displacement

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Page No.
Date

WORK-DONE

	M.Sc. I Sem. (Physics)	B.Sc. I Sem. (Physics)	Remark
	Matter Taught / Teaching Method	Matter Taught / Teaching Method	Completed / Incomplete
	Symmetry properties	—	Completed (Lectures, Pdf, Notes)
	Noether's theorem & its importance	Bifilar suspension & its exercises	Completed (e-resources, Youtube link etc)
	Conservation of Energy as consequence of Homogeneity of time	L-C - circuit and its excercises	Completed (Lecture, Pdf, Notes, PPT)
	Conservation of Linear mom. as consequence of Homogeneity of space	Lissajous figure & its Mathematical Treatment	Completed (Google meet, Notes, PPT)
	N — O —	A — Y	
		—	
	Conservation of angular momentum as consequence of Isotropy of space	—	Completed (PPT, Pdf, Notes, Lecture
	Generalised momentum	—	Completed (Pdf, Notes, PPT, e-links)
	Legendre Transformation	—	Completed (Green Board Teaching, Notes)
	Hamilton's Eqn of motion from variational principle	Damped Harmonic Oscillator & its theory	Completed (Notes, PG pathsala, PPT)
	Simple applications of Hamiltonian formulation	Lissajous figures in the case of different freq.	Completed (Notes, PPT, e-resources)
	Routh's procedure	Forced oscillator & its theory	Completed (Notes, PPT, e-pg pathshala)
	N — O	A — Y	
	Hamilton's Eqn in Relativistic Mechanics	—	Completed (Notes, PPT, Pdf)
	cyclic co-ordinates & its Applications	—	Completed (Pdf, PPT, e-resources)
	Derivation Hamilton's Canonical Eqn of motion	—	Completed (Pdf, Notes, Black Board Teaching)

Signature

LESSON-24

Name of Teacher:— Dr. M. K. Maurya
Month:— December-2021

Date	Proposed Work (Syllabus Taught of Month)	M.Sc. III sem. (Physics) Matter Taught Teaching Method
16.12.21	Simple Applications of	Surface distribution of
	Hamiltonian formulation,	charge
17.12.21	Routh's procedure, Hamilton	Surface distribution of
	Eqn in Relativistic Mechanics,	Electric dipoles
18.12.21	Cyclic co-ordinates, Derivation	— GURU —
19.12.21	of Hamilton's canonical eqn	— S — U
20.12.21	from Hamilton's variational principle	poissions and Laplace
	B.Sc. I Sem. Paper-I:—	Equation
21.12.21	UNIT-III:— Bifilier (oscilla)	Formal Solution of
	Suspension, LC-circuit,	Electrostatics
22.12.21	Lissajou's figures, damped	Boundary value problem
	Harmonic oscillator, case	with Green's function
23.12.21 To 25.12.21	of different freq, power	— WINTER —
	dissipation, quality factor,	
26.12.21	examples, transient &	— S — U
27.12.21	Steady states, power	wave Equation with
	absorption, Resonance,	Green's functions
28.12.21	UNIT-IV:— Strain, Stress,	
	elastic limit, Hooke's	
29.12.21	law, Modulus of rigidity,	
	poisson ration	
30.12.21		
31.12.21		Applications of Green's
		function in EMW

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Date

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M.Sc. I Sem. (Physics) Matter Taught Teaching Method	B.Sc. I Sem. (Physics) Matter Taught Teaching Method	Remark completed/ incomplete
Application of Hamiltons canonical eqn of motion	power dissipation in forced oscillator	completed (Green Board Teaching, Notes)
principle of Least action	Quality factor in forced oscillator	completed (Notes, PPT, e-resource link)
CHASI DAS	JAYANTI	
N D	A Y	
Applications of Least action	—	completed (Green Board Teaching)
Applications of Rouths procedure	—	completed (youtub link, e-resource, PPT)
Hamiltonian formulation in terms of Lagragian	—	completed (e-resource link, Pdf, Notes, PPT)
VACATION		
N D	A Y	
Applications of cyclic Co-ordinates	—	completed (Green Board Teaching, PPT)
C.L		
C.L		
C.L		
Applications of Legendres Transformations in classical Mechanics	Transient & Steady state in Forced oscillation	completed (Green Board Teaching, Notes, Pdf, PPT, e-resource links)

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Name of Teacher :— Dr. M.K. Maurya
Month :— January - 2022

LESSON

Date	Proposed Work (Syllabus Taught of Month)	M.Sc. III Sem. (Physics) Matter Taught Teaching Method
01.01.22	M.Sc. III Sem. (Physics): UNIT-II:- Boundary value problem in electrostatics, Method of images, point charge in the presence of grounded conducting Sphere, point charge in the presence of Insulated conducting Sphere, General Soln for potential conducting Sphere with hemisphere at a different potential	Boundary value pro in electrostatics
02.01.22		S U
03.01.22		Method of Electrical image (Assumption & prin
04.01.22		point charge in the presence of grounded Sphere
05.01.22		point charge in the pr of insulated conducting
06.01.22		General Solution for conducting sphere with a diff. potential
07.01.22	UNIT-III:- Introduction & defn of Magnetostatic, Biot & Savart law, Ampere's law, Magnetic Induction for a current loop, Magnetic field of a localised current distribution, ima external induction, Boundary condition on $\vec{B}$ & $\vec{H}$	Introduction & Def of Magnetostatics
08.01.22		Biot & Savart law and its Applications
09.01.22		S
10.01.22		Ampere's law and Applications
11.01.22		Magnetic induction for a current loop
12.01.22	M.Sc. I Sem. (Physics):— UNIT-IV:- canonical Transformation, generating function, Lagrange's & poisson bracket as canonical invariants, Eqn of motion in poisson bracket formulation, Infinitesimal contact Transformation, Liouvillee's theorem, Hamilton's & its Appl. Jacobi Eqn in simple	Magnetic field of a localised current in seminar ext. field
13.01.22		Boundary condition on $\vec{B}$
14.01.22		Boundary condition on $\vec{H}$
15.01.22		Application of local
16.01.22		current distribution ima external field

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WORK - DONE

M.Sc. I Sem. (Physics)	B.Sc. I Sem. (Physics)	Remarks
Matter Taught Teaching method	Matter Taught Teaching method	Completed/ Incompleted
Canonical Transformation and its excercises	Relation connecting different elastic const	Completed (Lecture, notes, PDF)
— N —	O — A — Y	
generating function	—	Completed (Lecture, Youtube link)
Lagrange's bracket as a canonical invariance	—	Completed (PPT, Notes, PDF)
Poisson's bracket as a canonical invariance	—	Completed (Class lecture, Notes)
Eqn of motion in poisson bracket formulation	Twisting couple of a solid cylinder	Completed (PPT, PDF, Lecture Notes)
Infinitesimal contact Transformation.	Twisting couple of a hollow cylinder	Completed (Notes, PPT's)
Liouville's Theorem	Bending moment (Theory & principle)	Completed (OER, Notes, PPT's)
U — N	D — A — Y	
Hamilton's Jacobi's Eqn of motion	—	Completed (Lecture Notes)
Applications of Hamilton's Jacobi in simple harmonic oscillator	—	Completed (Notes, Youtube link)
Application of Hamilton's Jacobi Eqn in Kepler's problem — Seminar	—	Completed (e-resource link)
Def^n of action & angle variable	Cantilever (Theory & principle)	Completed (Notes, e-content)
Application of action & angle variable in simple oscillator	Young's modulus by Bending of beam	Completed (e-content Notes)
Application of action & angle variable in Kepler's problem	Viscosity (Theory, principle & characteristics)	Completed (Notes, PPT, Youtube links)
U — N	D — A — Y	

Name of Teacher:— Dr. M.K. Maurya

Month :— January – 2022

Date	Proposed Work (Syllabus Taught of Month)	M.Sc. III Sem. (Physics) Matter Taught Teaching Metho
17.01.22	harmonic oscillator, and	LOCAL
18.01.22	Kepler's problems.	Uniformly Magnetis sphere
	UNIT-V:— Defn of action &	
19.01.22	angle variable, Applications	Magnetised sphere in a
	of action & angle variable in	external Magnetic fie
20.01.22	simple harmonic oscillator &	permanent
	Kepler's problems.	Magnet
21.01.22	B.Sc. I sem. (Physics):—	Applicatsons of permane
	UNIT-V:— Relation connecting	Magnet
22.01.22	different elastic constants,	Applicatsons of ampere's
	twisting couple of a cylinder	law
23.01.22	(Solid & hallow), Bending	S
24.01.22	moment, Cantiliver, Young's	Applicatsons of ampere
	Modulus by bending of beam	law
25.01.22	viscosity: Poiseulle's Eqn	Applications of Biot-
	of liquid flow through a	& Savart law
26.01.22	narrow tube, Eqn of	REPUBLI
27.01.22	continuity, Euler's Eqn,	
28.01.22	Bernoulli's theorem,	ONLINE
29.01.22	viscosity viscous flow &	
30.01.22	turbulent flow	Form
31.01.22		

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WORK— DONE

M.Sc. I Sem. (Physics) Matter Taught- Teaching Method	B.Sc. I Sem. (Physics) Matter Taught Teaching Method	Remark completed / incampleted
	HOLIDAY	
Periodic motion	—	completed
Theory of small Oscillation in Lagraglan formulation	—	(Notes, ppt, pdf) completed
		(Notes, Pdf, Youtube link)
Normal modes of its Theory	Poisseulle's Equation for viscosity	completed (Youtube link, Notes)
Normal co-ordinate & its Theory	Equation of continuity (Theory & principles)	completed (Notes, pdf, ppt)
Applications of Normal modes	Bernoulli's Theorem & its Applications	completed (Notes, PPT, Pdf)
U — N — D — A — Y		
Applications of Normal modes	—	completed (Lecture Notes)
Normal co-ordinates & its Applications	—	completed Ce-resource link
HOLIDAY		
REFRESHER COURSE INCT AT HRDC DAVV INDORE (MP) 22/01/2022 To	03/02/2022	

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Name of Teacher :— Dr. M. K. Maurya
Month :— February – 2022

LESSON PLAN

Date	Proposed Work (Syllabus Taught of Month)	Manner Taught / Teaching Method
01.02.22 To 09.02.22	M.Sc. III Sem. (Physics):- UNIT-III:- Uniformly magnetised sphere, magnetised sphere in a external field, permanent magnet	M.Sc. III Sem. (Physics) ONLINE THROUGH CLASS Uniformly magnetised sphere, Magnetised sphere in a external field, permanent magnets
10.02.22		
11.02.22		
12.02.22	M.Sc. I Sem. (Physics):- UNIT-V:	Applications of permanent magnets, Applications of uniformly magnetised sphere, Revision :- Maxwell's Equations
13.02.22	Periodic motion, theory of small oscillation, in Lagragian formula, Normal modes and co-ordinates, and its simple applications.	
14.02.22		
15.02.22		
16.02.22		
17.02.22	B.Sc. I Sem. (Physics):- UNIT-V: Poiseulle's law, coeff. of viscosity, stoke's law, Surface Tension, Molecular interpretation of surface tension, surface energy, Angle of contact, wetting.	Revision :- Lorentz Transformation, Revision :- surface Tension, Distribution of charge, Revision :- Poisson & Laplace Equation
18.02.22		
19.02.22		
20.02.22		
21.02.22		Revision & Doubt related Topics
22.02.22	Semester Break Dec. 2021	
23.02.22		

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WORK — DONE

	M.Sc. I sem. (Physics) Matter Taught Teaching Method	B.Sc. I Sem. (Physics) Matter Taught Teaching Method	Remark completed / incompleted
/	REFRESHER — COURSE IN ICT AT HRDC, DAVV		
	27/01/2023, To	03/02/2023,	
ised	periodic motion,	Poiseuill's law and its Equation	completed e-resources (youtube link)
a	Theory of small oscillations in Lagraigian formulation Normal modes (Theory & Excercises)	Coefficient of viscosity & Stoke's law Surface Tension & its Molecular interpretation	completed (lecture Notes, PPT) completed (google classroom)
U	— N — D	— A — Y —	
s	Normal co-ordinates (Theory & Excercises) simple applications of Normal modes simple applications of Normal co-ordinates Revision: Moment of inertia of a rigid body; Revision & Doubts	Surface Energy & Angle of contact wetting (Theory & Applications) Revision & Doubts session	completed (ppt of lecture Notes) completed (OER, youtube links) completed (OER, Google links) completed (lecture)
rges	Related Discussion session Revision & Doubts Related Discussion session	session related to Topics Revision & Doubts session related to Topics	(e-resources links) completed (e-resources links)
	U — N	D — A — Y	
ted	Revision & Doubts Discussion session	—	completed (e-resources links)
r	Semester	Exam	

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WORK — DONE

M.Sc. I Sem. (Physics) Matter Taught Teaching Method	B.Sc. I Sem. (Physics) Matter Taught Teaching Method	Remarks Completed / Incomplete
For Semester Exam		—
		—
		—
X — N — D — A — Y.		
(Physics)	B.Sc. I Sem. (Physics)	
Dec. 2021		+

2/3/22

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Name of Teacher:— Dr. M.K. Maurya
Month:— March- 2022

Date	Proposed Work (Syllabus Taught of Month)	M.Sc. IV sem. (P... Matter Teaching
01.03.22 To 06.03.22	M.Sc. IV Sem. (Physics):- UNIT-I Spectroscopy:— Paper-II: UNIT-I:- Microwave spectroscopy, pure rotational spectra of diatomic molecules, polyatomic molecules, Study of linear molecules, hyperfine structure, and quadrupole moment of linear molecules, Molecular structure determination, stark effect, inversion spectrum of ammonia UNIT-II:- Infrared Spectroscopy, Vibrational spectroscopy of diatomic molecules,	Microwave Spectrosco... pure rotation... Spectra of diato... pure rotation... of polyatomic... study of lin... molecules hyperfine ... Quadrupole m... Linear molec... S... Molecular str... determinatio... Experimenta... Tech. of Micr... Theory of St... in rotational ... inversion S... of ammo... Ho... Application of ... Spectroscopy
13.03.22	M.Sc. II Sem. (Physics):— UNIT-I	
14.03.22 15.03.22 16.03.22 17.03.22 18.03.22 19.03.22 20.03.22 21.03.22	Quantum Mechanics:— Paper-III UNIT-I:- Time dependent perturbation theory, constant, and harmonic perturbation, Transition probabilities, Fermi-Goldenrule, Adiabatic approximation, sudden approximation, The density matrix, Spin density matrix and magnetic resonance, semi classical theory of an atom with electromagnetic radiation, UNIT-I:- Scattering, theory, Scattering amplitude, cross section, Transformation	

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WORK - DONE

M.Sc. II Sem. (Physics) Matter Taught / Teaching Method	B.Sc. II Sem. (Physics) Matter Taught / Teaching Method	Remark, completed or incomplete
Break For C.L. Semester Exam (M.Sc. I, III sem (Physics), & B.Sc. I Sem. (Physics)) 2021		
Time dependent perturbation theory Calculation Eigenvalue Eigen State using perturbation method	—	completed e-resource lecture method
constant harmonic function	—	completed
Theory of harmonic perturbation	coulomb's law in vacuum expressed in vector form	completed e-resource Lecture
Transition probability using perturbation theory of Fermi Golden rule & its importance	Calculation of E for a simple charge distribution Electric E due to electric dipole	completed Notes, Black Board & PPT
— HOLIDAY —		
Adiabatic Approximation & its Application	—	completed Lecture, Notes
Sudden Approximation & its Application	—	completed Notes, lecture
Theory density matrix,	—	completed
Spin density matrix & its importance	Electric field due to Quadrupole & exercise	completed e-resource Notes
— HOLIDAY —		
Magnetic resonance	work done on a charge in an electrostatic field expressed as line integral	completed Lecture Notes
— SUNDAY —		
C. L.		Signature
Application of Magnetic resonance	—	

LESSON – 26

Name of Teacher:— Dr. M.K. Maurya
Month :— March – 2022

Date	Proposed Work (Syllabus Taught of Month)	M.Sc. IV sem. (Phy Matter Taugh Teaching Met
22.03.22	B.Sc. II Sem. (Physics):— Electricity, Magnetism and Electro-	
23.03.22	magnetic theory— UNIT-II: Coulomb's law in vaccum	Nuclear magnetic in rotational sp
24.03.22	expressed in vector form, calculation of E for simple charge distribution,	Infrared spectro (Basics)
25.03.22	Dipole and quadrupole Fields,	theory of intra
26.03.22	work done on a charge in an electrostatic field expressed as a	spectroscopy y vibrational spe
27.03.22	line integral, conservative nature of the electrostatic	of diatomic m
28.03.22	field, Relation between Electric	— S —
29.03.22	field and electric potential, torque on a dipole in a	vibrational spect
30.03.22	uniform electric field and its energy, flux of the	of polyatomic m theory of diatom
31.03.22	electric field, Gauss's law and its Application: E due to an infinite line of charge	oscillator Applications of oscillator & importance

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WORK – DONE

	M.Sc. II Sem. (Physics)	B.Sc. II Sem. (Physics)	Remark
	Matter Taught / Teaching Method	Matter Taught / Teaching Method	completed / Incomplete
	C. L.		
mole.	Semi-classical treatment	—	completed
ra	of an atom with EMW		(Lecture Notes
copy	Scattering theory	conservative Nature of	completed
	& its importance	electrostatic field	(Notes, e-resource
	Scattering amplitude	Relation between electric	Complete
aracteristics	& its importance	field and Electric potential	(Notes) Lectu
roscopy	cross-section and	Torque and Energy	completed
cule	its theory	on a dipole in a uniform	(Lecture Notes)
		field	
U — N —		D — A — Y	
	LOCAL — HOLIDAY		
			completed
		—	
scopy	Transformation from		(Lecture Notes)
lecule	centre of mass to laboratory frame	—	completed
onic	Theory scattering		(Lecture Notes)
	length		completed
harmonic		—	(Black Board teaching)
its	Application of scattering	Flux of the electric	completed
	length & cross sections	field and Gauss's	(Lecture Notes,
		law of Electrostatics	e-resources

4/4/22

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Name of Teacher:— Dr. M.K. Maurya

Month:— April -2022,

Date	Proposed Work (Syllabus Taught of Month)	M.Sc. IV Sem. Matter Taught Teaching
01.04.22	M.Sc. IV sem. (Physics) :— UNIT-II:— vibrational spectroscopy of	Spectroscopy: vibrational sp
02.04.22	polyatomic molecules, Harmonic	atomic molecules,
	oscillator, anharmonic oscillator	Harmonic osci
03.04.22	Rotational vibrators, Normal	theory
04.04.22	modes of vibration of polyatomic	Theory of an
	molecules, Experimental techniques,	oscillator and
05.04.22	Applications of infrared spectro-	Theory & Appl
	scopy, Reflectance spectroscopy	Rotational
06.04.22	UNIT-III:— Raman spectroscopy,	Theory of mor
	classical and Quantum theory of	vibration of
07.04.22	Raman Scattering	Experimental
~~08.04.22~~		of vibrationa
09.04.22		Applications
	M.Sc II Sem. (Physics):—	spectroscopy
10.04.22	~~UNIT-II:—~~ Partial wave analysis,	
11.04.22	optical theorem, phase shifts,	Theory of
	Scattering length, effective range,	Spectroscop
12.04.22	Low energy scattering, Born	
	approximation and its validity	
13.04.22	UNIT-III:— Relativistic Quantum	
	Mechanism, Klein Gordon equation,	
14.04.22	Failure, Dirac Equation, plane	
15.04.22	wave solutions, interpretation of	
	negative energy states, anti-	
16.04.22	particles, Spin of electron,	
	Magnetic moment of an electron	
17.04.22	due to spin, energy values	
18.04.22	in a Coulomb potential	

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Page No. Date

WORK-DONE

(physics) Method	M.Sc. II Sem. (physics) Matter Taught Teaching Method	B.Sc. II Sem. (physics) Matter Taught Teaching Method	Remark completed / Incomplete
Stroscopy of poly	Partial Wave analysis theory of & its Applications	Application of Gauss; E due to an infinite line of charge	completed Chapter Notes
ator and its	optical theorem & its Applications	E due to charged cylindrical conductor	Completed Lecture Method
— U —	— N —	— D — A — Y —	
harmonic its importance cation of vibrator modes of polyatomic molecule technique spectroscopy infrared	Theory of phase-shift & its importance Scattering length & effective range Theory of low energy Scattering theory of Born Approximation validity of Born approximation	— — — E due to infinite sheet of charge & 2 charged sheet Capacitors & Electrostatic energy Force per unit area of a conductor in a electric field	completed Lecture Notes, e-resources completed Lecture, Notes, PPT completed Lecture, Notes, PPT completed Lecture, Notes, PPT Completed Lecture, Notes, e-resources Completed Lecture, Notes, e-resources
S — U —	N — D	— A — Y	
reflectance & its Application	Theory of Relative Quantum Mechanics	—	Completed Lecture, Notes, e-resources
Dr. B. R. Ambedkar Jayanti Holiday			
Good Friday Holiday			
√ — U —	N — D	— A — Y	

Signature.....

Name of Teacher:— Dr. M. K. Maurya

Month:— April - 2022

Date	Proposed Work (Syllabus Taught Of Month)	M. Sc. IV Sem. (Physics) Matter Taught Teaching Method
19.04.22	B. Sc. II Sem. (Physics):—	
20.04.22	UNIT-II: Application of Gauss's	
21.04.22	law, calculation of E	
22.04.22	due to (1) a charged cylindrical	
23.04.22	conductor (2) an infinite sheet	
24.04.22	of charge and two parallel	
25.04.22	charged sheet, capacitors,	
26.04.22	Electrostatic field energy,	
27.04.22	Force per unit area of the	
28.04.22	surface of a conductor in	
29.04.22	an electric field, conducting	
30.04.22	sphere in a uniform electric	
	field	
	UNIT-I:— Repeated integral	
	of a function of more than	
	one variable, Defn of a	
	double and triple integral,	
	Gradient of a scalar field &	
	geometrical interpretation,	
	Divergence and curl of a	
	vector field and their	
	geometrical interpretation,	
	Line, surface and volume	
	integrals	

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WORK- DONE

M.Sc. II Sem. (Physics) Matter Taught Teaching Method	B.Sc. II Sem. (Physics) Matter Taught Teaching Method	Remark Completed/ incompleted
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Principal

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PROPOSED TEACHING PLAN FOR

(1) M.Sc. IIIrd Sem. (PHYSICS) Paper-III (Classical Electro dynamics) Revision: —

UNIT-II: — Method of Electrical images, Point charge in the presence of grounde conducting sphere

UNIT-IV: — Energy in magnetic field, Vector an Scalar potential, Gauge Transformat Green's function for the wave equati

UNIT-V: — Lorentz transformation of Electric and Magnetic field, Lorentz force in co-variant vector form, Electromagne field Tensor

(2) M.Sc. Ist sem. (PHYSICS): — Paper-II (Classical Mechanics) Revision: —

UNIT-II: — central force motion, D'Alembert principle, Lagrange equation of motion Calculus of variation, Derivation of Lagrange equation of motion from Hamilto principle.

UNIT-IV: — canonical transformation, generating function, Types of generating function

THE MONTH MAY - 2021 :
xxx

B.Sc. IST Year (PHYSICS) :— Paper-II (Electricity, Magnetism & Electromagnetic Theory)

Revision :

UNIT-I : Gradient of scalar field, geometrical interpretation, divergence of a vector Field, Green's theorem, Stokes' theorem Gauss Divergence theorem

UNIT-IV : Magnetisation, current, Magnetisation vector, three magnetic vector, magnetic permeability, susceptibility, Diamagnetic, paramagnetic and Ferromagnetic substances, B-H curve

UNIT-II : Calculation of electric field Intensity $\vec{E}$ due to simple charge distribution, work done on a charge in a electrostatic field as field, Relation between electric potential and electric field intensity, Gauss law and its Application.

UNIT-III : Electromagnetic induction, Faraday's law of Electromagnetic induction, Transformer, plane Electromagnetic waves in a vaccum,

CLASS → / DATE ←	M.Sc. III rd sem. (PHYSICS) (Theory / Practical) Revision	M.Sc. I st (Theory)
01.05.21	Method of Electrical images	central
02.05.21	S U	N
03.05.21	Point charge in the presence of grounded conducting sphere	characteristi central
04.05.21	Energy in magnetic field	Application force
05.05.21	vector and Scalar potential	Application force in D' Alembe
06.05.21	Applications of vector and scalar potentials	principle work
07.05.21	Gauge Transformation	Application of
08.05.21	Green's function and its importance	N
09.05.21	S U	
10.05.21	Green's function for the wave equation	Lagrange motion
11.05.21	Lorentz Transformation in four vector form	Hamiltonia and
12.05.21	Lorentz Transformation of Electric and magnetic field	Exercises on formul
13.05.21	Lorentz force in co-variant form	Exercises formula
14.05.21	Id UL	Fitar
15.05.21	Exercise on Lorentz force	Exercises on Equation o
16.05.21	S	U N
17.05.21	Applications of Green's wave equations	Exercises on Equation

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force motion	—	
D — A — Y	—	
properties of force Divergence of vector fied & Gauss Divergence theorem	—	
s of central stokes theorem	—	
of central Calculation of $\vec{E}$ due to	—	
Kepler problem simple charge distribution	—	
+ principle —	—	
of virtual —	—	
of principle- —	—	
virtual work D — A — Y	—	
Equation of work done on a charge in	—	
principle a electric field		
Hamiltonian Relation between electric	—	
Lagragian field and electric potential		
atrain Gauss' law and its	—	
on Hamiltonian Applications	—	
tion —	—	
Holiday		
Lagrange's —	—	
motion		
D — A — Y	—	
Lagrange's plane electromagnetic	—	
of motion waves in a vaccume		

CLASS → / DATE ↓	M.Sc. IIIrd Sem. (PHYSICS) (Theory / Practical) Revision	M.Sc. IIIrd Sem. (PHY (Theory / Prac Revision
18.05.21	Electromagnetic Field Tensor	Calculus of
19.05.21	Lorentz transformation for a current vector	Excercises on of variations
20.05.21	Lorentz transformation for vector potential	——— Do
21.05.21	Invariance of Electromagnetic vector potential	Derivation of L
22.05.21	Lorentz Force	Equation of mo transition canonical Transform
23.05.21	——— S ———	U ———
24.05.21	Energy in Electric field	conditions for Transformatio
25.05.21	Energy in electro-magnetic field	Excercises on Transformatio
26.05.21	——— Budh	———
27.05.21	Coulomb Gauge Transformation	Generating
28.05.21	Application & procedure for method of Electrical images	Types of generat function
29.05.21	Applications of vector potentials	Excercises on gen function
30.05.21	——— S ——— U	——— N
31.05.21	Four vector & examples	Excercise on gen function

Teacher

MAY-2021
(WORK DONE)

B.Sc. IInd year (PHYSICS)
(Theory / Practical)
Revision

Date Page Remark

Sign. of Teacher

variation	Magnetisation current & Magnetisation vector	—	MC
calculus	Relation between three magnetic vectors	—	MC
	Magnetic permeability & Susceptibility	—	MC
Lagrange's	—	—	MC
) am from principle	—	—	MC
tion N	— D —	A — y	—
canonical s	Diamagnetic & paramagnetic substance	—	MC
canonical	Feromagnetic substance & its characteristic properties	—	MC
Purnima	— Holiday,	—	—
function	B-H curve & Magnetisation cycle	—	MC
ng	Gradient of scalar field	—	MC
ating	—	—	MC
—	D — 4	— y	—
ating	Greens theorem	—	MC

HOD Physics

Principal

PROPOSED TEACHING PLAN FOR THE

(1) M.Sc. IV sem. (PHYSICS): Paper-II (Spectroscopy)

UNIT-I:

Microwave Spectroscopy, Pure rotational spectra of diatomic molecule, polyatomic molecules, Hyperfine structure, study of Linear molecules, quadrupole moment of Linear molecules, Molecular Structure determination, Stark effect, inversion Spectrum of ammonia.

UNIT-II:

infrared Spectroscopy, vibrational spectrosc of diatomic and simple polyatomic molecules, Harmonic oscillator, Anharmon oscillator, Rotational vibrators