

# SARASWATI MAHILA MAHAVIDHYALAYA, PALWAL

## LESSON-PLAN

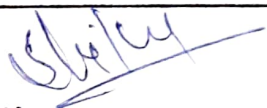
Class: M.Sc III sem (Physics)

Semester: ODD/EVEN

Subject: Electrodynamics and wave propagation

Session: 2020-21

Lecture Number	Topic
Lect-1	Review of four-vector and Lorentz transformation
Lect-2	Lorentz transformation in four Dim <sup>n</sup> . conservation of charge.
Lect-3	conservation of current density, Maxwell eqn.
Lect-4	Electromagnetic field Tensor in four Dim <sup>n</sup> .
Lect-5	Maxwell covariance under Lorentz transformation.
Lect-6	Lorentz invariants of electromagnetic fields.
Lect-7	Dual field Tensor - Introduction
Lect-8	Transformation of electric and magnetic field vector.
Lect-9	Covariance of force equation.
Lect-10	Radiating system - Introduction
Lect-11	field and radiation of localized source.
Lect-12	oscillating electric dipole.
Lect-13	centre fed linear <del>antenna</del> antenna.
Lect-14	centre half fed linear antenna.
Lect-15	Lienard-wiechert Potential
Lect-16	electric and magnetic field due to uniformly moving charge
Lect-17	electric and magnetic field due to accelerated charge
Lect-18	linear and circular acceleration.

  
Signature:

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Lecture Number	Topic
lect-19	angular distribution of power radiated.
lect-20	Numerical problem on centre fed antenna.
lect-21	Numerical problem on accelerated charge.
lect-22	Radiative Reaction force - Introduction
lect-23	scattering and absorption of radiation.
lect-24	Thomson scattering.
lect-25	Rayleigh scattering.
lect-26	Normal dispersion - Dispersion
lect-27	anomalous dispersion
lect-28	Ionosphere.
lect-29	Types of Ionosphere.
lect-30	Propagation of <del>ionosphere</del> wave through Ionosphere
lect-31	Reflection of electromagnetic wave by Ionosphere
lect-32	Motion of charged particle in uniformly E and B
lect-33	Time varying field.
lect-34	Numerical problem on Thomson scattering
lect-35	Numerical problem on Rayleigh scattering

*Shikha*

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Lecture Number	Topic
lect-36	field at the surface and with in conductor with
lect-37	wave guide
lect-38	mode of rectangular wave guide
lect-39	TE mode
lect-40	TM mode
lect-41	Attenuation wave guide
lect-42	dielectric wave guide
lect-43	circuit representation of 11 plate transmission line.
lect-44	Transmission line equation and solution.
lect-45	Characteristic impedance
lect-46	Propagation coefficient
lect-47	low loss frequency
lect-48	UHF Transmission Lines.
lect-49	Numerical Problem on TE
lect-50	Numerical Problem on TM modes.

*Shikha*  
Signature: