DHARAMPETH M. P. DEO MEMORIAL SCIENCE COLLEGE, NAGPUR

B. Sc. (Physics) SEMESTER-I
Paper-II (Electrostatics, Time varying fields & Electric Currents)

Unit- I

Coulombs law in vacuum in vector form
https://www.youtube.com/watch?v=Ck0DYOEBCww

Force between two charges
https://www.youtube.com/watch?v=JsrJ_w7t7iU

Electric field intensity
https://www.youtube.com/watch?v=gtqHhBctrhk

Electric potential
https://www.youtube.com/watch?v=Ir7TyL5qwc0

Electric field intensity due to a point charge
https://www.youtube.com/watch?v=dBmzKC0pUhQ

Electric dipole
https://www.youtube.com/watch?v=Ow_igpvr5oY

Electric dipole moment
https://www.youtube.com/watch?v=p_I_8hl-Gok

Electric field intensity due to an electric dipole
https://www.youtube.com/watch?v=j2lHyYQ2PJo

Electric field as a negative gradient of potential
https://www.youtube.com/watch?v=4p-liZyKpPQ

Conservative nature of the electric field
https://www.youtube.com/watch?v=DMBUXvb7Gm0

Unit- II

Introduction, definition of polar and non polar molecules

https://www.youtube.com/watch?v=SiZXRScxbl0

Polarization of charges in a dielectric, Clausius - Mossitti equation

https://www.youtube.com/watch?v=ZNcFK2ky6uc

https://www.youtube.com/watch?v=g9MBz0TlzJo

Three electric vectors D, E and P and relation between them

https://www.youtube.com/watch?v=NaYUFVZ0DKs

Concept of capacitance, Parallel plate capacitor without and with dielectric

https://www.youtube.com/watch?v=8ruSS5Wx0QI

Application of Gauss's law to parallel plate capacitor

https://www.youtube.com/watch?v=r-j0vE8rHYE

Unit- III

Electromagnetic induction
https://www.youtube.com/watch?v=3HyORmBip-w

Faradays laws in differential and integral form, Lenz's law
https://www.youtube.com/watch?v=7u-S6aVSGbI

Self and mutual induction
https://www.youtube.com/watch?v=xl0xkQ3C5Sg

Transformer, Construction, working and its parameters, Energy losses
https://www.youtube.com/watch?v=VrbxUQxu0l0

Current density, Equation of continuity
https://www.youtube.com/watch?v=TTj_vbV1Hqk

Kirchhoff's law
https://www.youtube.com/watch?v=hXyBPj4lmok

Rise and decay of current in LR and CR circuits
https://www.youtube.com/watch?v=laDGSqVg36U

Decay of charge in LCR circuits
https://www.youtube.com/watch?v=nnyvgf5-h9g

Unit- IV

Application of complex number in solving an a. c. circuit, j- operator method
https://www.youtube.com/watch?v=y31ptHW6UK4
https://www.youtube.com/watch?v=MTlGgouf27M

A.C. applied to pure resistive, pure inductive and pure capacitive circuit
https://www.youtube.com/watch?v=EmxiRYcTsoY

Application of j- operator in LR, CR and LCR circuit
https://www.youtube.com/watch?v=BhIO3yZ41h8

Resonance, Sharpness of resonance
https://www.youtube.com/watch?v=jOUorigfCmI

Series resonance circuit
https://www.youtube.com/watch?v=YLGrugmDvc0