



THE AMERICAN COLLEGE, MADURAI

(An Autonomous Institution Affiliated to Madurai Kamaraj University)

Re-accredited (2nd Cycle) by NAAC with Grade "A", CGPA – 3.46 on a 4-point scale

Backlog Arrear Examination, March 2021

Course Code: PHY 2453

Time: 3 hours

Course Title: Electricity & Magnetism

Max. Marks: 75

I. Answer **ANY FIVE** questions. **(5 × 15 =75)**

1. Derive an expression for electric field due to a ring of charge at an axial point.
 2. Derive Gauss law and discuss the applications of Gauss law.
 3. Obtain the expression for capacitance for a cylindrical and spherical capacitor.
 4. What is a magnetic field? Derive Biot Savart's law.
 5. Distinguish between Dia, Para and Ferro magnetic materials.
 6. Explain Langevin theory of paramagnetism.
 7. Explain Ionosphere and describe the reflection of electromagnetic waves by ionosphere.
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