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

PHS 1471/1561 – Physics for Mathematics I

Time: 3 HRS   **Max.Marks: 75**

PART – A

Answer **ANY FIVE QUESTIONS**   **5 X 15=75**

1. Show that the projectile motion of a particle is parabola.

2. Obtain Gauss's law and apply it to find the electric field due to uniformly charged sphere.

3. Derive an expression for capacitance of a parallel plate capacitor partly filled with dielectric.

4. Explain the motion of spinning top and derive the expression for precessional velocity of a top.

5. Derive an expression for the magnetic field for a long straight conductor using Biot-Savart's law.

6. Explain the Meldes string method to determine the frequency of a vibrator.

7. Discuss the properties of ferro magnetic materials and explain the hysteresis curve.

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