

Roll No.

Y– 3118
M. Sc. (Physics) (Second Semester)
EXAMINATION, May/June 2021
Paper 201
CLASSICAL ELECTRODYNAMICS PLASMA AND
ANTENNAE PHYSICS
Time : Three Hours

Maximum Marks : 85

Minimum Pass Marks : 29

Note—Attempt *all* questions.

Unit-I

1. Show that under Coulomb gauge, the electromagnetic Scalar potential is exactly the electro-static potential while the vector potential is described completely in terms of transverse waves. 17

Unit-II

2. What are Lienard Wiechart potentials ? Calculate electric and magnetic field vector for uniformly moving charged particle using Lienard Wiechart potential and discuss the results. 17

Unit-III

3. Explain the plasma diagnostics by Langmuir probe and by microwave. Describe one application of plasma. 17

Unit-IV

4. Discuss magnetosonic and Alfren Waves. Obtain magneto hydrodynamics equation. 17

Unit-V

5. Write explanatory notes on the followings : 17
 - (a) Horizontal patterns in broadside array.
 - (b) Radiation from a current sheet.