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SA—49—2025

FACULTY OF SCIENCE

B.Sc. (First Year) (Second Semester) EXAMINATION

MARCH/APRIL, 2025

PHYSICS

Paper–IV

(Electricity and Magnetism)

(Saturday, 19-4-2025) **Time : 10.00 a.m. to 12.00 noon**

Time—2 *Hours* *Maximum Marks*—40

N.B. *:—* (*i*) Attempt *all* questions

(*ii*) Draw a diagram wherever necessary.

1. Explain principle and construction of moving coil type Ballastic galvanometer and deduce the relation between charge (q) and deflection (θ). 15

Or

(*a*) State Ampere's circuital law and deduce its integral form. 8

(*b*) Explain force acting on a current carrying conductor. 7

2. Explain principle, working and types of transformers with figures. 15

P.T.O.

Or

(*a*) Discuss mutual inductance with mutual inductance of pair of coil. 8

(*b*) Explain mutual inductance of a co-axial solenoids. 7

3. Write short notes on (any *two*) : 10

(*a*) Maxwell's displacement current

(*b*) Permeability and susceptibility

(*c*) Lenz's law

(*d*) L-C-R parallel resonance circuit.