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PA—49—2024

FACULTY OF SCIENCE

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

MARCH/APRIL, 2024

(New Course)

PHYSICS

Paper–IV

(Electricity and Magnetism)

(Thursday, 18-04-2024) **Time : 10.00 a.m. to 12.00 noon**

Time—2 *Hours* *Maximum Marks*—40

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

(*ii*) Draw well labelled diagram wherever necessary.

1. Give principle, construction of moving coil type Ballastic galvanometer and deduce the relation between charge (*q*) and deflection (*a*). 15

Or

(*a*) Discuss self-inductance with self inductance of a solenoid. 8

(*b*) State Ampere's circuital law and deduce its differential form. 7

P.T.O.

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

Or

(*a*) Define Biot and Savart law and explain its application to circular coil of its centre. 8

(*b*) Derive an expression for mutual inductance of a pair of coil. 7

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

(*a*) Hysteresis curve

(*b*) Power in A.C. circuit

(*c*) A.C. bridge (Wheatstone bridge)

(*d*) Maxwell's displacement current.