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VA—49—2024

FACULTY OF SCIENCE

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

NOVEMBER/DECEMBER, 2024

(New Course)

PHYSICS

Papper–IV

(Electricity and Magnetism)

(Monday, 9-12-2024)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—40

N.B. :— *All questions are compulsory.*

1. Describe moving coil type Ballistic Galvanometer and obtain an expression for charge passing through it. 15

Or

- (a) State and explain Biot and Savart's Law. 8

- (b) Derive an expression for Ampere's Law. 7

2. Obtain an expression for the average power in an AC circuit and hence define power factor. 15

Or

- (a) Derive an expression for mutual inductance of a pair of coil. 8

- (b) Obtain an expression for self-inductance of a solenoid. 7

P.T.O.

3. Write short notes on any *two* of the following (each of **5** marks) : 10

- (a) Maxwell's displacement current.
- (b) Hysteresis curve.
- (c) Faraday's Law of electromagnetic induction.
- (d) Types of transformers.