This question paper contains **2** printed pages]

NA—49—2023

FACULTY OF SCIENCE

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

NOVEMBER/DECEMBER, 2023

(New Pattern)

PHYSICS

Paper–IV

(Electricity and Magnetism)

(Tuesday, 12-12-2023) **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. Discuss motion of charged particles in uniform electric field and uniform magnetic field. 15

Or

(*a*) State principle of B.G. and prove ($q\alpha$ θ) 8

(*b*) Define permeability and susceptibility and give their relation. 7

2. Explain in brief induction, capacitor and resistance with (Z_L and X_L), (Z_C and X_C) and (Z_R and X_R). 15

P.T.O.

Or

(*a*) Explain mutual induction and mutual induction of pair of coil. 8

(*b*) Define electromagnetic induction. State Faraday's laws of EMI and Lenz law. 7

3. Write short notes on any *two* of the following : 10

(*a*) Using Biot and Savart law explain straight conductor carrying current

(*b*) Define Magnetic induction, Flux density and Intensity of Magnetization

(*c*) Explain self-induction of Solenoid

(*d*) AC Bridge (Wheatstone bridge).