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NA—47—2023

FACULTY OF SCIENCE

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

NOVEMBER/DECEMBER, 2023

(New Pattern)

PHYSICS

Paper—VII

(Statistical Physics, Electromagnetic and Theory of Relativity)

(Monday, 11-12-2023)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

N.B. :— All questions are compulsory.

1. Derive an expression for Fermi-Dirac distribution law. 15

Or

(i) State and explain Macro and Microstate. 8

(ii) Obtain an expression for relation between entropy and probability. 7

2. Derive Lorentz transformation. 15

Or

(i) Obtain an expression for wave equation of free space. 8

(ii) Explain Faraday's law of electromagnetic induction. 7

P.T.O.

WT

(2)

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

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- (i) Permutations and Combinations
- (ii) Electron gas
- (iii) Displacement current
- (iv) Time dilation.

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