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**GA—65—2023**

**FACULTY OF SCIENCE**

**B.Sc. (Third Semester) EXAMINATION**

**APRIL/MAY, 2023**

**(New Course)**

**PHYSICS**

**Paper VII**

**(Statistical Physics, Electromagnetics and Theory of Relativity)**

**(Tuesday, 02-05-2023)**

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

*Time— Two Hours*

*Maximum Marks—40*

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

1. Derive an expression for Maxwell-Boltzmann distribution law. 15

*Or*

(a) State and explain permutations and combinations with suitable example. 8

(b) Macro and Micro state. 7

2. Derive an expression for electromagnetic energy and Poynting vector. 15

*Or*

(a) Explain variation of mass with velocity. 8

(b) Obtain an expression for Einstein's energy-mass relation. 7

P.T.O.

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3. Write short notes on (any two) :

(a) Probability and frequency

(b) Photon gas

(c) Ampere's Law

(d) Time dilation

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