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X—66—2019

FACULTY OF SCIENCE

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

OCTOBER/NOVEMBER, 2019

PHYSICS

Paper VII

(Statistical Physics, Electromagnetic Theory & Relativity)

(Friday, 29-11-2019)

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

Time—2 Hours

Maximum Marks—40

N.B. :— (i) Attempt All questions.

(ii) Log table is allowed.

(iii) Non-programmable calculator is allowed.

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

Or

(a) State and explain micro and macro states. 8

(b) Derive wave equations for electric field (E) for free space condition. 7

2. Explain the basic postulates of Einstein's special theory of relativity. Derive the Lorentz space-time transformation formulae. 15

Or

(a) Derive wave equations for magnetic field (B) for free space condition. 8

(b) State and explain the terms permutations and combinations 7

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

(a) Probability and Frequency

(b) Electron gas

(c) Poynting vector

(d) Velocity addition

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