

Roll No.

21191

B. Sc. (Pass Course) 2nd Semester Examination – May, 2019

PHYSICS-I (PROPERTIES OF MATTERS, KINETIC THEORY & RELATIVITY)

Paper : Phy-201

Time : Three Hours } [Maximum Marks : 45

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt at least one question from each Unit. A student has to attempt five questions in all.

UNIT – I

- 1. Define Young's modulus, Bulk modulus, Modulus of rigidity and Poisson's ratio. Write two relation that connect these elastic constants. 9
2. Deduce an expression for the couple per unit twist of a uniform solid cylinder. 9

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- 3. What is bending moment ? Find an expression for the depression at a point distant x from the fixed end of a cantilever. 9

UNIT – II

- 4. Consider an ideal gas and by using Maxwell's law for distribution of speed derive the expression for :
(i) Most probable speed (Vm) 3
(ii) Average speed (Vav) 3
(iii) Root mean square speed (Vrms) 3
5. Write notes on the following :
(i) Brownian motion 5
(ii) Free mean path 2
(iii) Law of equipartition of energy 2

UNIT – III

- 6. What is length contraction and time dilation ? Derive an expression for proper length and proper time interval. 9

(2)

7. What is rest mass ? Derive an expression for m_0 energy equivalence.
 8. With the help of suitable diagram explain Michelson Morley experiment and its outcome.
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