



UNIVERSITY OF NORTH BENGAL

B.Sc. Honours Part-III Examination, 2021

PHYSICS

PAPER-VII

Full Marks: 90

ASSIGNMENT

*The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.
All symbols are of usual significance.*

For each question, the candidates will be graded according to the quality of the presentation of the topic (8 marks) and originality of language (2 marks). Maximum word limit for each topic is 400

Write short notes on *all* of the following topics

10×9 = 90

GROUP-A

(Classical Mechanics and Fluid Dynamics)

1. Small oscillations: Normal modes and normal frequencies
2. Lagrange's equation of motion and one of its application
3. Euler's equation of motion for an ideal fluid

GROUP-B

(Statistical Mechanics)

4. B-E distribution function and derivation of Planck's law of black body radiation
5. Equipartition of energy and its application

GROUP-C

(Electronics-II)

6. Wien bridge oscillator
7. OPAMP and its applications as adder, subtractor, integrator and differentiator
8. Flip-flops: RS and JK
9. Digital to analog converter and analog to digital converter

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