



UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 2nd Semester Examination, 2021

GE2-PHYSICS

Full Marks: 40

ASSIGNMENT

The figures in the margin indicate full marks.

The question paper contains Section-A and Section-B. Candidates are required to answer any one section from the two sections and they should mention it clearly on the Answer Book.

*[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 of each topic is 400]*

Section-A
Electricity and Magnetism

Write short notes on any four of the following topics

10×4 = 40

1. Electrostatic potential due to an electric dipole and a uniformly charged solid sphere.
2. Line, surface and volume integrals of vector fields.
3. Self and mutual inductances: relation between them.
4. Biot-Savart's law in magneto-statics and its applications.
5. Maxwell's equations and electromagnetic wave propagation through vacuum.
6. Capacitance of a spherical capacitor.

Section-B
Waves and Optics

Write short notes on any four of the following topics

10×4 = 40

1. Principle of superposition and formation of beats due to superposition of two collinear SHMs.
2. Forced vibration and occurrence of resonance in the vibrating body.
3. Formation of Newton's ring by reflected light and its applications.
4. Poiseuille's equation for the rate of flow of liquid through a capillary tube.
5. Fresnel's biprism experiment.
6. Fresnel diffraction and zone plate.

—x—