



UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 4th Semester Examination, 2021

GE4-PHYSICS (A & B)

Full Marks: 40

ASSIGNMENT

*The figures in the margin indicate full marks.
All symbols are of usual significance.*

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. Gradient, Divergence and Curl and their significance
2. Gauss' theorem of electrostatics and its application for electric field due to a point charge
3. Biot-Savart's law and its application for straight current carrying conductor
4. Energy density in electromagnetic field and Poynting vector
5. Dielectric medium and polarization
6. Brief introduction to diamagnetic and paramagnetic and ferromagnetic materials

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. Standing waves on a string and normal modes of vibration.
3. Huygen's principle of wave propagation: Reflection of light.
4. Newton's rings: Measurement of wavelength and refractive index.
5. Diffraction grating and its Resolving power.
6. Production and analysis of circularly polarized light.

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