



UNIVERSITY OF NORTH BENGAL
B.Sc. Honours Part-III Examination, 2021

PHYSICS
PAPER-VIII

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
(Physical Optics II)

1. Population inversion and He-Ne laser
2. Production and detection of plane and circularly polarized light
3. Construction and working principle of optical fibres

GROUP-B
(Electromagnetic Theory and Special Theory of Relativity)

4. Relativistic Doppler effect
5. Propagation of electromagnetic waves in conducting medium: Skin depth
6. Lorenz theory of normal and anomalous dispersion

GROUP-C
(Solid State Physics)

7. Langevin's classical theory of diamagnetism
8. Clausius-Mosotti relation for dielectrics
9. Laue and Bragg equations for X-ray diffraction

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