



**UNIVERSITY OF NORTH BENGAL**  
B.Sc. Honours 4th Semester Examination, 2021

**CC8-PHYSICS**

**MATHEMATICAL PHYSICS-III**

Full Marks: 40

**ASSIGNMENT**

*The figures in the margin indicate full marks.  
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 of each topic is 400**

**Write short notes on any *four* of the following topics**

10×4 = 40

1. Direct and inverse Fourier transform and its importance in physics.
2. Fourier convolution theorem and its applications.
3. Similarity transformation of a matrix.
4. Eigen vectors and eigen values of matrices and their applications in physics.
5. Singularities: poles, branch points, branch cuts and their importance in complex analysis.
6. Differentiability of a complex function and its importance.

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