UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 3rd Semester Examination, 2020

CC5-PHYSICS

MATHEMATICAL PHYSICS-II

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. Solution of Laplace's equation in cylindrical coordinates using separation of variables.

2. Frobenius series solution method: Legendre's differential equation.

3. Beta and Gamma functions and relation between them.

4. Expansion of periodic functions in a series of sine and cosine functions and determination of Fourier coefficients.

5. Bassel's function of the first kind: Generating function and recurrence relations.

6. Parseval's theorem and its applications.

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