



**UNIVERSITY OF NORTH BENGAL**  
B.Sc. Honours 5th Semester Examination, 2020

**CC11-PHYSICS**

**QUANTUM MECHANICS AND APPLICATIONS**

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. Time-dependent Schrodinger equation and physical interpretation of the wave function.
2. Momentum-space wave function of a particle in a quantum mechanical system and position-momentum uncertainty principle.
3. Quantum harmonic oscillator and zero point energy.
4. Total angular momentum of electron and Larmor's theorem.
5. Space quantization and the Stern-Gerlach experiment.
6. Normal and anomalous Zeeman effect.

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