B.Sc DEGREE EXAMINATION, EVEN SEMESTER 2021
I Year I Semester
General Chemistry - II

Max.marks :25

Answer any **FIVE** questions $(5 \times 5 = 25)$ Marks

1. Based on Bohr's atomic model, derive an expression for the radius of the orbit in an atom.
2. (a) Write the Schrodinger equation and explain the significance of wave function φ and φ 2.
   (b) Explain how did de Broglie come to conclusion that electron behaves like waves.
3. (a) Define ionisation energy of an atom and explain why the first ionization energy of nitrogen is greater than either that of carbon or oxygen?
   (b) Define Pauling's scale of electro negativity.
4. (a) Write the mechanism of nitration of benzene
   (b) Describe how Baeyer's strain theory explains the relative stability of the rings.
5. (a) Derive Bragg's equation and explain the terms involved.
   (b) Give any two differences between isotropic and anisotropic crystal
6. Describe how the structure of crystalline sodium chloride can be established using X- rays.
7. (a) Write a short note on Lorry – Bronsted acid – base theory.
   (b) Define common ion effect and write its application in qualitative analysis.