



**DUDHNOI COLLEGE**  
**SESSIONAL EXAMINATION: DECEMBER- 2021**  
**CHEMISTRY (HONOURS)**

**Semester**  
**I**

Paper: CHE-HC-1016: Inorganic Chemistry I

**Time: 1 hour**  
**Full marks: 20**

*Answer all questions. The figure in the margin indicates the full mark for the question.*

1. Answer any five of the following: 1x5=5
  - a. What is Ionization Enthalpy?
  - b. What is Effective Nuclear charge?
  - c. What is Resonance?
  - d. What is Electronegativity?
  - e. What is a Normalized wave function?
  - f. Draw the Angular distribution curve of  $d_{z^2}$  orbital
  - g. What Pauli's Exclusion Principle?
  
2. Answer any five of the following: 3x5=15
  - a. What is Born Haber Cycle? How lattice energy is estimated using Born Haber cycle?
  - b. Explain the structure of  $PCl_5$  and  $SF_4$  with the help of Hybridization.
  - c. Explain the bonding in  $O_2$  using MOT. Why  $O_2$  is paramagnetic?
  - d. " $He_2^+$  can exist" – explain using MOT.
  - e. Logically establish the Schrodinger's Equation.
  - f. "Newtonian mechanics cannot be applied on a system of micro-particle" – explain.
  - g. What is Well Behaved function?