Assignment 5

Course Name: PHYSICS-2 **Course Code: 15B11PH211**

Q1: Draw a diagram that depicts the variation of interatomic force as a function of spacing in terms of its attractive and repulsive components. Derive the expression for equilibrium spacing. **[CO2]**

Q2: Plot the variation of attractive potential energy, repulsive potential energy and resultant potential energy with interatomic distance, when two atoms are brought nearer. Drive the expression for equilibrium spacing of two atoms for which potential energy is minimum and hence obtain the dissociation energy. **[CO2]**

Q3: Derive an expression for lattice energy in ionic crystals and prove that the Madelung constant for molecule in NaCl like ionic crystal is 2ln2. **[CO2]**