Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **14CH2001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **BASIC INORGANIC CHEMISTRY** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Write short notes on: i) Hund’s rule ii) aufbau principle  iii) Pauli exclusion principle iv) Octant rule. | CO1 | 12 |
| b. | Explain the J. J. Thomson atomic model? | CO1 | 5 |
| c. | What is the major drawback of Rutherford nucleus model? | CO1 | 3 |
| (OR) | | | | |
| 2. | a. | Describe the Bohr’s atomic model with a neat diagram? | CO1 | 10 |
| b. | Write short notes on: i) atomic number ii) mass number | CO1 | 5 |
| c. | Briefly discuss the duel nature of the electron? | CO1 | 5 |
|  |  |  |  |  |
| 3. | a. | Highlight the salient feature of a ionic bond? Illustrate with the specific example? | CO2 | 10 |
| b. | Write the Lewis structure of the following ionic compounds, NaCl, CaF2, Al2O3, MgO? | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | Explain the types of covalent bonds with suitable example? | CO2 | 10 |
| b. | Define the co-ordinate bond? Illustrate with an example? | CO2 | 10 |
|  |  |  |  |  |
| 5. | a. | Explain Born – Habber cycle for analysis of reaction energy? | CO2 | 12 |
| b. | Derive the Born-Lande equation? | CO2 | 8 |
| (OR) | | | | |
| 6. | a. | List out the physical properties of metallic bonds? | CO2 | 10 |
| b. | What are crystal defects? Explain the types of Defects? | CO2 | 10 |
|  |  |  |  |  |
| 7. | a. | Describe the salient features of Molecular Orbital Theory with suitable examples? | CO2 | 12 |
| b. | Find out the bond order and magnetic properties of B2 and C2 homonucleus diatomic molecules using molecular orbital theory? | CO2 | 8 |
| (OR) | | | | |
| 8. | a. | Why bond angle of H2O and NH3 are different when compared to BF2 and CH4? Give valid reasons? | CO2 | 8 |
| b. | Find out the structure of the following compounds using valence bond theory : i) CH4, ii) PF5. | CO2 | 6 |
| c. | Briefly discuss the order of energy level in the molecular orbital diagram? | CO2 | 6 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Briefly discuss the Bronsted- Lowry concept of ‘Acids and Bases’? | CO3 | 10 |
| b. | Classification of the Hard and Soft Acids and Bases(HSAB)? | CO3 | 10 |