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



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **17CH2001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **CHEMICAL BONDING AND CONCEPTS OF ACIDS AND BASES** | **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. | Explain the Bohr’s atomic model with a neat diagram. | CO1 | 10 |
| b. | Highlight the salient feature of an ionic bond. Illustrate with a specific example. | CO1 | 10 |
| **(OR)** | | | | |
| 2. | a. | What is the major drawback of Rutherford nucleus model? | CO1 | 4 |
| b. | Write short notes on Metallic bond and types of Hydrogen bonds. | CO1 | 10 |
| c. | Define: i) Hund’s rule ii) Octant rule. | CO1 | 6 |
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| 3. | a. | Discuss the formation of ionic compounds with suitable reactions. | CO2 | 10 |
| b. | Explain the Born Lande equation to findout the lattice energy. | CO3 | 5 |
| c. | Write the Lewis structure of the following ionic compounds,  H2, O2, N2. | CO2 | 5 |
| **(OR)** | | | | |
| 4. | a. | Briefly discuss the frenkel and schotty defects with an example. | CO2 | 10 |
| b. | Write the Lewis structure of the following ionic compounds,  NaCl, CaF2, Al2O3, MgO, NH3. | CO2 | 10 |
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| 5. | a. | List out the physical properties of metallic bonds. | CO2 | 10 |
| b. | Write short notes on conductors and semiconductors. | CO3 | 10 |
| **(OR)** | | | | |
| 6. | a. | Describe the mechanism of n-doping and p- doping with an example. | CO2 | 10 |
| b. | Briefly discuss the order of energy level in the molecular orbital diagram. | CO3 | 10 |
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| 7. | a. | Write the valence bond treatment of π bonding in ClNO and NO3- | CO3 | 10 |
| b. | Briefly discuss the effect of electro negativity in VSEPR theory with suitable example. | CO3 | 10 |
| **(OR)** | | | | |
| 8. | a. | Describe the salient features of Molecular Orbital Theory with suitable examples. | CO3 | 12 |
| b. | Why bond angle of H2O and NH3 are different when compared to BF2 and CH4? Give valid reasons. | CO3 | 8 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Briefly discuss the Bronsted- Lowry concept of ‘Acids and Bases’? | CO4,5 | 10 |
| b. | Explain the various types of silicates with neat diagram. | CO6 | 10 |