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



**End Semester Examination – Nov/Dec – 2017**

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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 discovery of Cathode and Anode rays. Give any two properties of cathode and Anode rays. | CO1 | 14 |
| b. | Write short notes on: i. atomic number ii. mass number | CO1 | 6 |
| (OR) | | | | |
| 2. | a. | Write short notes on Heisenberg Uncertainty Principle. | CO1 | 5 |
| b. | Briefly Discuss the dual nature of the electron. | CO1 | 5 |
|  | c. | Highlight the salient features of an ionic bond. Illustrate with specific example. | CO2 | 10 |
|  |  |  |  |  |
| 3. | a. | Illustration Born – Habber cycle for analysis of reaction energy. | CO2 | 12 |
|  | b. | What are solid state defects? Discuss the types of Defects. | CO2 | 8 |
| (OR) | | | | |
| 4. | a. | Highlight the Born – Lande equation. | CO2 | 5 |
|  | b. | Briefly discuss on preparation and physical properties of ionic compounds. | CO2 | 15 |
|  |  |  |  |  |
| 5. | a. | With schematic diagram discuss Bond Length. | CO1 | 10 |
|  | b. | Briefly discuss the general properties of metals in Conductivities, Malleability and Luster. | CO2 | 8 |
| (OR) | | | | |
| 6. | a. | Summarize the VSEPR theory with suitable example. | CO1 | 12 |
|  | b. | Give any three difference between bonding molecular orbitals and antibonding molecular orbitals. | CO3 | 8 |
|  |  |  |  |  |
| 7. | a. | Write the Valence Bond Theory treatment of π-bonding in ClNO- and NO3--. | CO3 | 10 |
|  | b. | Find out the bond order and magnetic properties of N2 and O2 homonuclear diatomic molecules using molecular orbital theory. | CO3 | 10 |
| (OR) | | | | |
| 8. | a. | Why bond angle of H2O and NH3 are different when compared to BF2 and CH4? Give valid reasons. | CO4 | 10 |
|  | b. | Describe the valance bond theory with suitable example. | CO3 | 10 |
|  | |  |  |  |
|  | | **Compulsory:** |  |  |
| 9. | a. | Describe the Bronsted-Lowry concept of ‘Acids and Bases’. | CO5 | 12 |
|  | b. | Write short notes on Silicones. | CO6 | 8 |

ALL THE BEST