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

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

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| **Code : 17CH3017** |  | **Duration :** | **3hrs** |
| **Sub. Name : MAIN GROUP 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. | Describe the application of cryptands and crown ethers in extraction of alkali and alkaline earth metal ions and catalysis. | CO1 | 10 |
| b. | What is Grignard Reagent? Explain the preparation and application of Grignard Reagent. | CO2 | 10 |
| (OR) | | | | |
| 2. | a. | State allotrope? Explain the synthesis, structure and properties of carbon allotrope. | CO1 | 10 |
| b. | Beryllium compounds are covalent in nature. Justify? | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Complete the following reactions  2BeCl2 + LiAlH4  →  2nBuLi + BeCl2 →  Be(OH)2 + 2HCl + 2H2O →  Be(BH4)2 + 2PPh3 →  Be(CH3)2 + 2HN3 → | CO4 | 10 |
| b. | Explain the synthesis and structure of beryllium carbide, dimethylberyllium and beryllium azide. | CO4 | 10 |
| (OR) | | | | |
| 4. | a. | Clarify the polymorphism and pseudopolymorphism with example. | CO1 | 10 |
| b. | Draw the structure for [Be(OH)3]33-, BeH2, Be4O(O2CR)6 and cryptand-222. | CO4 | 10 |
|  |  |  |  |  |
| 5. | a. | Explain the synthesis, structure and applications of**“**Inorganic benzene”. | CO6 | 10 |
| b. | Provide details of the synthesis and synthetic utilityof Boronic acids. | CO4 | 10 |
| (OR) | | | | |
| 6. | a. | Explain the preparation, structure and reactions of B2H6. | CO6 | 10 |
| b. | Explain the different type of silicates based on the structure. | CO3 | 10 |
|  |  |  |  |  |
| 7. | a. | Explain the synthesis and structure of any five F-Xe-O and Xe-F compounds. | CO1 | 10 |
| b. | Explain the synthesis and application of organometallic compounds of Si, Sn and Pb. | CO4 | 10 |
| (OR) | | | | |
| 8. | a. | State Wades rule and styx number? Explain their application. | CO5 | 10 |
| b. | Explain the synthesis and reactivities of interhalogens compounds. | CO3 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain the synthesis and structure of P–S and P–O cages. | CO3 | 10 |
| b. | Describe the synthesis and structure of phosphazene, Polyphosphazene, S4N4 and (SN)x. | CO3 | 10 |