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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **15CH3017** | **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. | Give an account of chemical properties of Alkali and alkaline earth metals. | CO1 | 15 |
| b. | In which form does BeCl2 exist in (i) vapour phase (ii) in solution and (iii) in solid state? | CO1 | 5 |
| (OR) | | | | |
| 2. |  | Explain the allotropes of Sulphur, Carbon and Phosphorus with suitable structures. | CO2 | 20 |
| 3. |  | Describe the synthesis and structure polyphosphazene and polythiazyl Polymers with appropriate chemical equations. | CO2 | 20 |
| (OR) | | | | |
| 4. | a. | Explain the synthesis and structure of any five Interhalogen compounds with suitable chemical equations. | CO1 | 15 |
|  | b. | Explain the synthesis and structure of Tellurium Oxyacids. | CO1 | 5 |
| 5. | a. | Explain the synthesis, structure and applications of Selenium Oxides. | CO2 | 15 |
|  | b. | Explain the reactions of XeFn (n=2, 4 and 6) with various lewis acids. | CO2 | 5 |
| (OR) | | | | |
| 6. | a. | Explain the synthesis, structure and chemical reactions of Boric acid. | CO3 | 15 |
|  | b. | Explain the synthesis and applications of Crown Ethers. |  | 5 |
| 7. | a. | Explain the synthesis, structure and chemical reactions ofBorazine. | CO3 | 15 |
|  | b. | Short note on Polymorphism. | CO2 | 5 |
| (OR) | | | | |
| 8. | a. | Explain the synthesis, structure and chemical reactions of Diboranes. | CO2 | 10 |
|  | b. | Explain the synthesis and structure of Xenon-oxygen compounds. | CO2 | 10 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Explain the synthesis and structure of carboranes. | CO3 | 10 |
|  | b. | How Wade's rules used to determine the structure of borane clusters? Explain. | CO2 and CO3 | 10 |

ALL THE BEST