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 : 15CH3016** |  | **Duration :** | **3hrs** |
| **Sub. Name : INSTRUMENTAL METHODS OF ANALYSIS** |  | **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 in detail about the Complexometric titrations. | CO3 | 10 |
| b. | Discuss Paper Chromatography. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Discuss Thin Layer Chromatography. | CO1 | 10 |
| b. | Distinguish between Mobile and Stationery Phases in Chromatography. | CO1 | 10 |
| 3. | a. | Write the principle and techniques involved in Column Chromatography. | CO1 | 10 |
|  | b. | Discuss in detail about the Gas chromatography. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Explain the Principle and techniques of TGA. | CO2 | 10 |
|  | b. | Illustrate the Ion Exchange Chromatography with examples. | CO1 | 10 |
| 5. | a. | Write notes on Atomic emission Spectroscopy. | CO2 | 10 |
|  | b. | What are the applications of Chromatography? | CO1 | 10 |
| (OR) | | | | |
| 6. |  | Discuss in detail about Transmission Electron Microscopy. | CO2 | 20 |
| 7. |  | Explain the principle, instrumentation and application of XRD. | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Explain the Scanning Electron Microscope. | CO2 | 20 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Give a detailed account on Chemical Sensors. | CO3 | 10 |
|  | b. | Write notes on Water Analysis. | CO3 | 10 |

ALL THE BEST