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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

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

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

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

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **11CH101** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **APPLIED CHEMISTRY** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | What do you mean by homopolymer? | (1) |
| 2. | Explain thermoplastics with examples. | (1) |
| 3. | What is temporary hardness and how to remove it? | (1) |
| 4. | What is EDTA? | (1) |
| 5. | Define British Thermal Unit. | (1) |
| 6. | What is Carbonisation? | (1) |
| 7. | Define Oxidation Potential. | (1) |
| 8. | What do you mean by salt bridge? How it is indicated in the reaction representation? | (1) |
| 9. | What the uses of Calcium hydroxyl apatite? | (1) |
| 10. | Write any two names of biomaterials. | (1) |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11 | What do you mean by Tacticity? Write the types of Tacticity? | (3) |
| 12 | Explain the formation of sludge and scales in the boiler. | (3) |
| 13 | Discuss the composition, reaction and uses of gaseous fuel – water gas. | (3) |
| 14 | Imagine you are nailing half of a nail into a tree, remaining half of the nail is projected outside. Which part of the nail is easily undergoes corrosion, why? | (3) |
| 15 | Write the preparation and uses of Lead zirconate titanate. | (3) |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. | a. | Discuss the various types of polymerization with reactions. | (8) |
| b. | Describe the fiber reinforced plastics and How is prepared. | (7) |
| (OR) | | | |
| 17. | a. | What is PVC and write its preparation and uses? | (7) |
| b. | Discuss the preparation, properties and uses of any TWO industrial polymers. | (8) |
| 18. | a. | Discuss caustic embrittlement? | (4) |
| b. | Discuss any one of the desalination process | (3) |
| c. | How Zeolite process is used to soften the hard water? | (8) |
| (OR) | | | |
| 19. | a. | Describe the lime soda process of softening of water | (8) |
| b. | Discuss the ion exchange process of demineralization of water | (7) |
| 20. | a. | How will you analyze flue gases using Orsat Apparatus? Discuss in detail. | (10) |
| b. | Write the Characteristics of Metallurgical coke. | (5) |
| (OR) | | | |
| 21. | a. | Discuss the process of coke by Otto-Hoffman method with diagram | (10) |
| b. | Calculate the gross and net calorific value of coal having the following compositions carbon = 85%, Hydrogen =8%, Sulphur=1%, Nitrogen = 2%, Ash = 4%, Latent heat of stream = 587 cal/g. | (5) |
| 22. | a. | Derive Nernst equation for the measurement of electrode potential. | (8) |
| b. | Discuss Concentration cell with examples | (7) |
| (OR) | | | |
| 23. | a. | Write a notes on O2-F2 fuel cell with equations. | (7) |
| b. | Describe the electrochemical corrosions with equations? | (8) |
| 24. | a. | Describe the various approaches for the preparation of nanomaterials. | (10) |
| b. | Discuss the preparation and uses of Calcium hydroxyl apatite, Barium Titanate. | (5) |
| (OR) | | | |
| 25. | a. | Explain the following method for the synthesis of Nanoparticles a) Sol-Gel method and  b) Ball mill method | (10) |
| b. | Discuss the preparation and uses of Cu-Al-Be alloy and Hydrogel. | (5) |

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