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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 :** | **10NT203** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **ORGANIC REACTIONS AND MECHANISMS** | **Max. Marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | What is an electrophile? Give an example. | (1) |
| 2. | State Hammett equation. | (1) |
| 3. | Write down the Bredt’s rule. | (1) |
| 4. | What is the catalyst used in Clemmensen reduction? | (1) |
| 5. | Mention the product obtained through the Bayer-Villiger rearrangement. | (1) |
| 6. | Draw the structure of ‘benzyne’ intermediate. | (1) |
| 7. | Mention the electrophile in the nitration of benzene. | (1) |
| 8. | What is a hydration reaction? | (1) |
| 9. | What is the necessary condition for aldol condensation to take place? | (1) |
| 10. | Formulate Fries rearrangement. | (1) |
| **PART B(5 X 3= 15 MARKS)** | | |
| 11 | Outline the SN1 mechanism with an example. | (3) |
| 12 | What is an SE2 mechanism? Give an example. | (3) |
| 13 | Illustrate the hydroboration reaction with a suitable example. | (3) |
| 14 | Highlight the salient features of Reimer-Tiemann reaction. | (3) |
| 15 | Formulate Benzidine rearrangement. | (3) |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. | a. | What is a NGP reaction? Highlight with an example. | (5) |
| b. | Discuss the effect of structure and leaving group on the rate of an SN2 reaction. | (10) |
| (OR) | | | |
| 17. | a. | What is the Ullmann reaction? Give its salient features. | (6) |
| b. | Outline the mechanism of Electrophilic substitution on an aromatic ring? Give examples. | (6+3) |
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| 18. | a. | Write short notes on  (i) Diazonium coupling (ii) Stork-enamine reaction | (2x5=10) |
| b. | Explain the significance ‘ρ’ in the Hammett equation? | (5) |
| (OR) | | | |
| 19. | a. | With specific examples explain the orientation of substitution in mono-substituted aromatic rings. | (10) |
| b. | Discuss the mechanism of nitrosation reaction. | (5) |
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| 20. | a. | What is Michael addition? Illustrate with specific examples. | (7) |
| b. | Outline the mechanism of a E2 reaction highlighting the salient features of it. | (8) |
| (OR) | | | |
| 21. | a. | Formulate the Chugaev reaction and explain the mechanism? | (7) |
| b. | Discuss the salient features of  (i) Hydroxylation (ii) Epoxidation | (8) |
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| 22. |  | Write short notes on  a. Wittig reaction.  b. Reformatsky reaction.  c. Dieckmann condensation | (3x5=15) |
| (OR) | | | |
| 23. |  | Write briefly on the following highlighting their important features  a. Perkin condensation.  b. Grignard reactions.  c. Gattermann reaction. | (3x5=15) |
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| 24. | a | What is the Lossen rearrangement? Explain its mechanism. | (7) |
| b | Outline the Sommlett-Hauser rearrangement and highlight its salient features. | (8) |
| (OR) | | | |
| 25. | a. | Explain the Stevens rearrangement giving details of its mechanistic pathway. | (8) |
| b. | Formulate the Von Ritcher reaction. Discuss its characteristic features. | (7) |

ALL THE BEST