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



**End Semester Examination – Nov/Dec– 2019**

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| **Code :** | **17CH3018** | **Duration :** | **3hrs** |
| **Sub. Name :** | **SYNTHETIC REAGENTS AND CONCERTED REACTIONS** | **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. | NaBH4 is less reactive than LiAlH4. Prove with suitable examples. | CO2 | 10 |
| b. | Predict the reduction products A and B with proper mechanism (where ever applicable). | CO2 | 6 |
| c. | Predict the suitable condition to get the products A and B. | CO1 | 4 |
| **(OR)** | | | | |
| 2. | a. | Compare the following reaction.  i)MeerwinPondarfVeerley reduction and ii) Oppeneaur oxidation. | CO2 | 10 |
| b. | Predict the products A and B. Give the reason for your prediction | CO1 | 6 |
| c. | Give the structure of any four commonly used oxidizing agents. | CO2 | 4 |
|  |  |  |  |  |
| 3. | a. | Define Photosensitizer. | CO5 | 2 |
|  | b. | Predict all the possible Norrish type I and Norrish type II cleavage products in the following reaction. | CO5 | 10 |
|  | c. | Give the Jablonski diagram. Define the processes involved in the diagram. | CO5 | 8 |
| **(OR)** | | | | |
| 4. | a. | Predict all the possible products with mechanism. | CO5 | 8 |
|  | b. | Elaborate the photochemical method to prepare oxetanes. | CO5 | 6 |
|  | c. | Write a short note on photochemical reduction. | CO5 | 6 |
|  |  |  |  |  |
| 5. | a. | Explain the following reactions.  i)Dienone phenol rearrangement ii) Photo Fries Rearrangement. | CO5 | 12 |
|  | b. | Predict the product with stereochemistry. | CO3 | 8 |
| **(OR)** | | | | |
| 6. | a. | Compare Claisenwith Johnson-Claisen rearrangements. | CO3 | 8 |
|  | b. | Write a short note on Cope rearrangement and its modifications. | CO3 | 8 |
|  | c. | Predict the product in the end reaction. | CO4 | 4 |
|  |  |  |  |  |
| 7. | a. | Using correlation diagram prove Woodward Hoffman rule for the electrocyclic ring closing reaction of hexatriene (4n+2) system. | CO3 | 15 |
|  | b. | Suggest any two methods to prepare Ketene and discuss its reaction with cyclopentadiene. | CO4 | 5 |
| **(OR)** | | | | |
| 8. | a. | Predict the product and explain the relative stereochemistry between the substituents. | CO3 | 10 |
|  | b. | Apply Frontier Molecular Orbital theory in the 4n and 4n+2 system and prove Woodward Hoffmann rule for Diels Alder reaction. | CO4 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Define: i. Synthons ii) Reagents iii) Synthetic equivalents. | CO6 | 6 |
|  | b. | Propose the route to synthetic route for the following: | CO6 | 6 |
|  | c. | Give example for Umpolung. | CO6 | 4 |
|  | d. | Using Carbonyl condensation strategy, analyze the starting material for the following: | CO6 | 4 |