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 – April/May– 2017**

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| **Sub. Code:** | **15CH3009** | **Duration :** | **3hrs** |
| **Sub. Name:** | **SYNTHETIC METHODOLOGY AND NATURAL PRODUCTS** | **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. | What do you mean by NBS? Discuss its mechanism with and without free radical mechanism. | CO1 | 7 |
| b. | Name the reagent used to couple carboxylic acid and primary amine? Explain with the mechanism. | CO4 | 7 |
| c. | How to convert the following using the reagents | CO5 | 6 |
| (OR) | | | | |
| 2. | a. | What is DDQ? Describe its dehydrogenation mechanism | CO2 | 8 |
| b. | Discuss the reaction mechanism of Gilmann reaction | CO4 | 6 |
| c. | How will you convert the following reaction using the reagents | CO5 | 6 |
| 3. | a. | What do you understand Homo coupling and Cross coupling? Give an examples. | CO2 | 4 |
|  | b. | Draw the catalytic cycle of Heck Reaction with explanation. | CO4 | 8 |
|  | c. | Discuss the reaction mechanism of the following reaction | CO5 | 8 |
| (OR) | | | | |
| 4. | a. | What do you mean by oxidative addition and reductive elimination? | CO3 | 4 |
|  | b. | Explain the Suzuki reaction with mechanism? | CO4 | 8 |
| c. | Discuss the catalytic cycle of Ullmann reaction with example. | CO4 | 8 |
| 5. | a. | Discuss the importance of Multicomponent reactions | CO2 | 4 |
|  | b. | Draw the stepwise route of the Strecker’s 3MCRs with explanation | CO4 | 8 |
|  | c. | Predict the product and write the mechanism of the reaction | CO6 | 8 |
| (OR) | | | | |
| 6. | a. | Explain Atom Economy in multicomponent reactions | CO3 | 4 |
|  | b. | Expalin the mechanism of the Ugi Reaction | CO3 | 8 |
|  | c. | Predict the starting material of the following reactions   1. ii. | CO6 | 8 |
| 7. | a. | Name the following   1. ii. | CO6 | 4 |
|  | b. | Discuss any three reactions of diazines. | CO3 | 6 |
|  | c. | In imidazole, which position Electrophilic Substitution reaction is predominant? Why? | CO5 | 6 |
|  | d. | Write shorts notes on the nomenclature of hetereocyclic compounds | CO2 | 4 |
| (OR) | | | | |
| 8. | a. | Discuss the general stratergy of heterocycle synthesis | CO2 | 5 |
|  | b. | Describe Edmann degradation with the example | CO4 | 7 |
|  | c. | Write the synthesis of pyridazine and pyrimidine with reactions | CO3 | 8 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Describe the extraction techniques, purification and general structure elucidation methods of Alkaloids | CO3 | 10 |
|  | b. | Discuss the mass fragmentation patterns of Steroids. | CO4 | 5 |
|  | c. | Draw the flowchart with various stages of identification of bioactive compounds from natural extract? | CO3 | 5 |

ALL THE BEST