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– 2017**

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| **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. | Give the catalytic cycle for Stille coupling Reaction. Explain the steps involved in the catalytic cycle. | CO1 | 10 |
| b. | How will you synthesize the following compounds using coupling reactions? Predict the coupling partners and give the mechanism | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Write a short note on Heck coupling. Discuss the steps involved in the mechanism. | CO1 | 10 |
| b. | How will you synthesize the following compounds using coupling reactions? | CO1 | 10 |
| 3. | a. | How will you synthesize the following compounds using multi component reactions? Give mechanism | CO2 | 10 |
|  | b. | Predict the product in the following reactions | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | How will you synthesize the following compounds using multi component reactions? Give mechanism | CO2 | 10 |
|  | b. | Write a short note on the application of DCC and DDQ in organic synthesis. | CO2 | 10 |
|  |  |  |  |  |
| 5. | a. | Write an essay on the synthesis and reactions of Pyridazines | CO3 | 15 |
|  | b. | What are the importance of pyrimidines in the biological system? | CO3 | 5 |
| (OR) | | | | |
| 6. | a. | Write an essay on the synthesis and reactions of Imidazole | CO3 | 15 |
|  | b. | Predict product A and B in the above reactions |  | 5 |
|  |  |  |  |  |
| 7. | a. | Discuss on the various techniques used to elucidate the structure of terpenes. | CO4 | 10 |
|  | b. | What is Hoffmann Elimination? How is it used in structural elucidation of alkaloids? | CO4 | 6 |
|  | c. | Write a short note on soxhlet apparatus? | CO5 | 4 |
| (OR) | | | | |
| 8. | a. | How will you elucidate the structure of alkaloids using the modern techniques? | CO5 | 12 |
|  | b. | Write a short note on oxidative degradation techniques to elucidate the structure of compounds. | CO5 | 8 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | How will you identify the amino acid sequence using Edman degradation and Sanger’s method? | CO6 | 10 |
|  | b. | Discuss and differentiate between nucleic acid and nucleotide | CO6 | 5 |
|  | c. | Give the structures and functions of any five vitamins | CO6 | 5 |

ALL THE BEST