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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| **Code :** | **14CH2006** | **Duration :** | **3hrs** |
| **Sub. Name :** | **BASIC ORGANIC CHEMISTRY** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| Q. No. | Sub Div. | Questions | Marks |
| 1. | a. | Write the name of the following compound: | 3 |
| b. | Write the structure of hept-2-en-3-ol. | 3 |
| c. | What is meant by electron delocalization? | 4 |
| d. | Write all the resonance structures of benzene. | 4 |
| e. | Define addition reactions and substitution reactions. Give an example. | 6 |
| (OR) | | | |
| 2. | a. | Arrange the following carbocations in the increasing order of their stability. | 4 |
| b. | What are carbanions and free radicals? Give examples. | 6 |
| c. | Write the structure of nonan-5-ol, 4-aminooctanal, hexanal, p-nitrobenzaldehyde, and acetophenone. | 10 |
| 3. | a. | Write any three rules of writing resonance structures. Give a brief account of inductive effect citing out suitable examples. | 10 |
|  | b. | List out the types of organic reactions and briefly explain with example for each type. | 10 |
| (OR) | | | |
| 4. | a. | Write the rules of assigning R, S configuration. | 5 |
| b. | Explain asymmetric synthesis with an example. | 5 |
| c. | Give an account of the stability of free radicals. | 10 |
|  |  |  |  |
| 5. | a. | Write the differences between configuration and conformation. | 5 |
| b. | Draw all the conformational isomers of 1,2–dichloroethane | 5 |
| c. | Write the mirror images of the following molecules: | 4 |
| d. | Assign E, Z nomencalyure to the following molecules: | 6 |
| (OR) | | | |
| 6. | a. | Draw the energy profile diagram of all the conformations of 1,3-dimethylcyclohexane. Explain which conformer is the most stable and why. | 10 |
| b. | Assign R, S configuration to the following molecules: | 6 |
| c. | Point out the chiral centres in the following compound:    How many stereoisomers are possible for the compound? | 4 |
|  | | | |
| 7. | a. | Explain the following with examples:   1. Asymmetric synthesis 2. Resolution of isomers 3. What is E, Z isomerism? Explain with example. | 3+3+4 |
| b. | Describe field effect with an illustration. | 10 |
| (OR) | | | |
| 8. | a. | Draw all the conformational structures of n–butane along with their potential energy profile. Point out the least stable isomer. | 10 |
| b. | Draw all the conformations of ethane and their potential energy diagram. | 10 |
|  |  | **Compulsory:** |  |
| 9. | a. | Explain the following with examples: stereoselectivity, stereospecificity, and regiospecificity. | 10 |
| b. | Explain any three enantioselective reactions with suitable illustrations. | 10 |

ALL THE BEST