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

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**End Semester Examination – Nov/Dec – 2018**

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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** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Write the structure of pent-1-enol | CO1 | 1 |
| b. | Draw the structure of m-nitrotoluene. | CO1 | 1 |
| c. | What are alicyclic compounds? | CO1 | 2 |
| d. | What are heterocyclic compound? Give an example. | CO1 | 2 |
| e. | Explain the classification of organic compounds with examples for each. | CO1 | 14 |
| (OR) | | | | |
| 2. | a. | Give an example for a stable free radical. | CO1 | 1 |
| b. | Draw the structure of tricyclopropylmethylcation. | CO1 | 1 |
| c. | What is an ambident nucleophile? | CO1 | 2 |
| d. | Define: electrophile. | CO1 | 2 |
| e. | Give a detailed account of carbocations. | CO1 | 14 |
|  | | | | |
| 3. | a. | Give an example for aryne. | CO1 | 1 |
| b. | Write the structure of triphenylmethane radical. | CO1 | 1 |
| c. | Which of the following is more stable: t-butyl cation or methyl cation? Why? | CO1 | 2 |
| d. | Define: nucleophile. | CO1 | 2 |
| e. | Give a detailed account of carbanions. | CO1 | 14 |
| (OR) | | | | |
| 4. | a. | What is meant by a substrate in a reaction? | CO1 | 1 |
| b. | Give an example of an electrophile. | CO1 | 1 |
| c. | Define elimination reactions. | CO1 | 2 |
| d. | Define substitution reactions. | CO1 | 2 |
| e. | Give a detailed account of inductive and field effects. | CO1 | 14 |
|  | | | | |
| 5. | a. | What are organic compounds? | CO1 | 1 |
| b. | Give an example for an electrophile. | CO2 | 1 |
| c. | Define kinetic control of a reaction. | CO3 | 2 |
| d. | Explain rearrangement reaction with an example. | CO2 | 2 |
| e. | Give a detailed account of hyperconjugation. What are the rules of resonance? | CO3 | 14 |
| (OR) | | | | |
| 6. | a. | Define: catenation. | CO2 | 1 |
| b. | Mention any one characteristic of an organic compound. | CO2 | 1 |
| c. | What are addition reactions? | CO2 | 2 |
| d. | Give examples of E and Z isomers. | CO2 | 2 |
| e. | Give a detailed account of mesomerism and tatomerism. | CO2 | 14 |
|  | | | | |
| 7. | a. | What are optical isomers? | CO2 | 1 |
| b. | Mention any one method of resolution of isomers. | CO2 | 1 |
| c. | Define cis-trans isomerism. | CO2 | 2 |
| d. | Define: racemic mixture. | CO2 | 2 |
| e. | Write the rules for assigning R,S configuration for stereoisomers. Assign R, S configuration for various chiral ceenters of D-glucose. | CO2 | 14 |
| (OR) | | | | |
| 8. | a. | Define racemization. | CO3 | 1 |
| b. | What is meant by resolution of isomers? | CO3 | 1 |
| c. | What is meant by a mesomer? | CO3 | 2 |
| d. | What are enantiomers Give an example. | CO3 | 2 |
| e. | Explain with an energy profile diagram various conformations of n-butane and ethane. | CO3 | 14 |
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|  | | **Compulsory**: |  |  |
| 9. | a. | How many stereoisomers are possible for a molecule with 3 chiral centers? | CO3 | 1 |
| b. | How many chiral centers are there in 1,2-dibromobutane? | CO3 | 1 |
| c. | Define conformation and configuration. | CO3 | 2 |
| d. | Define diastereomers. Give examples. | CO3 | 2 |
| e. | Explain with an energy profile diagram various conformations of 1,2-dimethylcyclohexane and 1,3-dichlorocyclohexane. | CO3 | 14 |