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**PRESIDENCY UNIVERSITY**

**Bengaluru**

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| **Ph.D. Course Work End Term Examinations – JAN-FEB 2025** |
| **Date:** 31- 01- 2025 **Time:** 09:30 am – 12:30 pm |

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| --- | --- | --- |
| **School:** SOE | **Program:** Ph.D. | |
| **Course Code :** CHE801 | **Course Name :** Organic Spectroscopy | |
| **Semester**: | **Max Marks**: 100 | **Weightage**: 50% |

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| --- | --- | --- | --- | --- | --- |
| **CO - Levels** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** |
| **Marks** | **20** | **20** | **30** | **30** | **-** |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Do not write anything on the question paper other than roll number.*

**Part A**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Answer ALL the Questions. Each question carries 10 marks. 6Q x 10M=60 Marks** | | | | |
| **1** | Discuss the different types of interactions in UV-Vis Spectroscopy | **10 Marks** | **L2** | **CO1** |
| **2** | Explain the factors effecting IR spectroscopy | **10 Marks** | **L3** | **CO2** |
| **3** | Discuss chemical shift and its measurements | **10 Marks** | **L3** | **CO3** |
| **4** | Explain McLafferty rearrangement | **10 Marks** | **L3** | **CO4** |
| **5** | Write the typical group frequencies for –CH, -OH, N-H, C-C, -CO and aromatic systems | **10 Marks** | **L2** | **CO2** |
| **6** | Discuss the UV absorption of heterocyclic ring structures | **10 Marks** | **L2** | **CO1** |

**Part B**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Answer the Questions. Each question carries 20 marks 2Q x 20 = 40 Marks** | | | | | |
| **7.** |  | Explain the instrumentation, working and applications of MALDI-TOF Mass spectrometer | **20 Marks** | **L3** | **CO4** |
|  | | | | | |
| **8.** |  | Explain 1H NMR spectroscopy of any two organic molecules | **20 Marks** | **L2** | **CO3** |

**\*\*\*\*\* BEST WISHES \*\*\*\*\***