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**GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)**



Ph.D. (Second Semester-Summer) Examinations, May - 2025
23SPPECY2012 - Advances in Organic Chemistry
(Chemistry)

Time: 3 hrs

Maximum: 70 Marks

The figures in the right hand margin indicate marks.

Answer ANY FIVE Questions.**(14 x 5 = 70 Marks) Marks**

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| 1.a. | Explain the important guidelines used for the retrosynthesis analysis of the aromatic compounds by disconnection approach? | 7 |
| b. | What is the Diels alder reaction? Explain the reaction and give its respective retro-synthetic approach. | 7 |
| 2. | Write explanatory notes on: | 14 |
| | a) Guidelines for Chemoselectivity | |
| | b) Umpolung Reagents | |
| 3.a. | Give the mechanism action of reagent SeO ₂ | 7 |
| b. | Write about the oxidation of alcohols. | 7 |
| 4. | Write the polymerization of ethylene using the carbocation intermediate? | 14 |
| 5.a. | Write the principle and applications of HPLC? | 7 |
| b. | What is a carbanion? Write the stability order of the carboanion. | 7 |
| 6.a. | How do you distinguish the Chromatographic techniques of HPLC and TLC? | 7 |
| b. | Write the different ways of representing of molecules? | 7 |
| 7. | What is plane polarized light. Write about optical activity of molecules? | 14 |
| 8.a. | What do u mean by racemisation and resolution? How can you separate the mixture of molecules? | 7 |
| b. | Write about the stereochemistry of six membered saturated molecules? | 7 |

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