

**Gurudas College**  
**Department of Chemistry**  
**Internal Assessment 2021**  
**SEM-V**  
**Paper CEMA-CC-5-12 Th**

Time: 30 Minutes

Full Marks: 10

Answer any five questions:

5×2=10

1. [2+2] Cycloaddition reaction is not a thermally favourable process— why?
2. Thermal [1, 5] – H shift is facile but thermal [1, 3] – H shift is not observed. — Explain.
3. The mutarotation of D-glucose in an aprotic solvent does not occur in the presence of pyridine alone or cresol alone; when both cresol and pyridine are present together, mutarotation of glucose takes place. Explain the observation with mechanism.
4. Write the structure of the product when 2-methylfuran is treated with DMF-POCl<sub>3</sub>.
5. How can you prepare phenanthrene from naphthalene by Haworth synthesis?
6. What happens when *cis* and *trans* isomer of 3-hydroxy cyclohexane carboxylic acids are heated separately?
7. Which of the two conformation of *trans*-1-ethyl-3-methyl cyclohexane is more stable and why?
8. How can you prepare Alanine by Strecker synthesis?