



Seat No. _____

HO-003-1102002

M. Sc. (Sem.-II) (CBCS) Examination

April - 2023

Organic Chemistry : Paper (C)-202

Faculty Code : 003

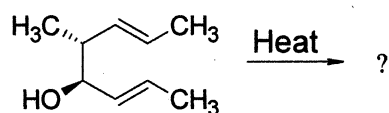
Subject Code : 1102002

Time : $2\frac{1}{2}$ Hours / Total Marks : 70

- Instructions:** (1) All the questions carry equal Marks.
(2) All questions are compulsory.

1 Answer any seven of the following briefly: 14

- (a) Explain quasi aromatic compound with suitable compound.
- (b) Discuss briefly, first law of photo-chemistry.
- (c) Briefly give group transfer reaction in Pericyclic reaction.
- (d) Define, electrocyclic reaction with suitable example in Pericyclic reaction.
- (e) Discuss the aromatic character of tropylium ion and their cation and anion.
- (f) Explain the term photosensitization.
- (g) Give Huckel rule for aromatic and antiaromatic compound.
- (h) Give the Fluorescence and Phosphorescence in photochemistry.
- (i) Complete the following reaction;



- (j) Discuss Homoaromatic compounds with suitable example.

- 2** Answer any two of the Following: **14**
- (a) Explain the term annulene, Discuss the aromatic behavior of [14] annulene and [18] annulene.
 - (b) Write the synthesis of Tropolone and discuss their aromatic behavior and properties.
 - (c) Explain the aromatic behavior of azulene, Give their synthesis and properties.

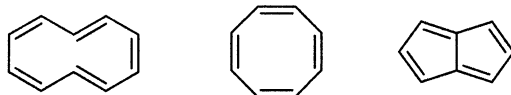
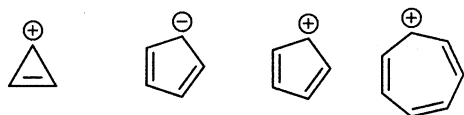
- 3** Answer the following: **14**
- (a) Discuss (4s+2s) cyclo addition reaction with FMO approach.
 - (b) Draw the molecular orbital diagram of 1,3,5-hexatriene and calculate the node and determine the symmetry for each energy level. Derive the rule for both condition in Pericyclic reaction.

OR

- 3** Answer the following: **14**
- (a) Define the term sigma tropic rearrangement and explain Claisen rearrangement as an example of sigma tropic rearrangement with Pericyclic approach.
 - (b) Give an account on cyclo addition reaction with the help of correlation diagram approach with citing suitable example.

- 4** Answer the Following: **14**
- (a) Draw the Jablonski diagram, Discuss all radiative and non radiative process.
 - (b) Discuss photo-addition reaction between olefin and ketone, with at least two examples.

- 5** Answer any two of the following : **14**
- (a) Distinguish the following compounds in aromatic, non-aromatic and anti-aromatic and discuss the magnetic properties of following compound.



- (b) Explain Photo-isomerization of cis- and trans stilbene.
- (c) Describe Norrish-I and Norrish-II cleavages giving at least one example of each.
- (d) Discuss the PMO approach in Pericyclic reaction with suitable example.