

Section D

7. Discuss the mechanism of the the following reactions : 4×3

- (a) Barton reactions
- (b) Photofries rearrangement
- (c) Di- π -methane rearrangement.

8. (a) Discuss the possible products after photo-irradiation of α -santonin. Give mechanistic details.
- (b) Discuss the formation of products giving suitable mechanism after photo-irradiation of benzene. 6+6

Roll No.

Total Pages : 04

LMDQ/D-23

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ORGANIC CHEMISTRY SPECIAL-II

CHEM-305

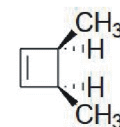
Time : Three Hours]

[Maximum Marks : 60

Note : Attempt *Five* questions in all, selecting at least *one* question from each Section. All questions carry equal marks.

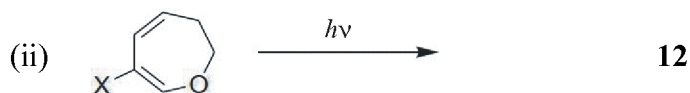
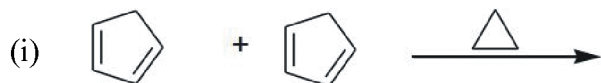
Section A

1. (a) Predict the product of cycloaddition of ethylene and cis-2-butene, addition being supramolecular on both the reactants. State under which condition (thermal or photochemical) the reaction will be symmetry allowed.
- (b) The following compound can open by two conrotatory modes. Predict the products in each case and state which one will be formed predominantly.



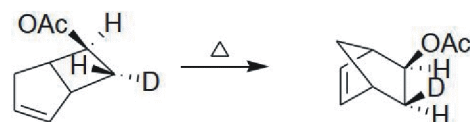
12

2. (a) Giving proper reasoning, predict the reaction condition for disrotatory interconversion of 1,3,5-hexatriene \rightleftharpoons cyclohexadiene.
- (b) Predict the products and give mechanism for their formation for the following reactions :



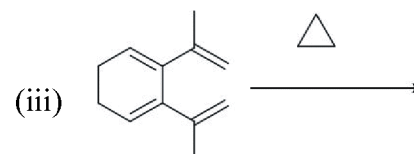
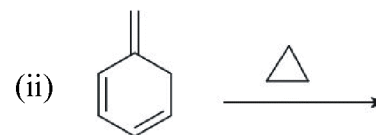
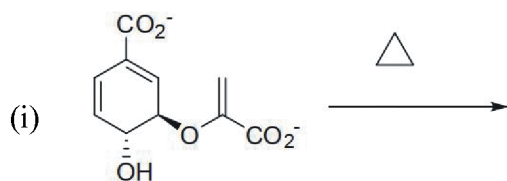
Section B

3. (a) Write down the mechanism for the following rearrangement :



- (b) With the help of a suitable example discuss Sommet-Houser and cope rearrangement. **12**

4. Giving justification, predict the products in the following reactions under given reaction conditions : **4×3**

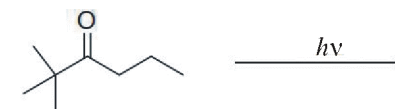


Section C

5. (a) Draw and discuss Jablonski diagram.
- (b) Giving mechanism, predict the products of the photolysis of $(\text{CH}_3)_3\text{CO}(\text{CH}_3)_3$.
- (c) Giving mechanism, predict the product(s) in the following reaction :



6. (a) Giving mechanism, predict the product(s) of the photolysis of following ketone :



- (b) Predict the product(s) when a solution of benzophenone in isopropyl alcohol is irradiated at 345 nm.
- (c) Discuss the photodimerisation of 1,3-butadiene.

4×3