

Roll No.

42003

**M. Sc. Chemistry 4th Semester
Examination – May, 2019**

ORGANIC SPECIAL- IV

Paper : CY(H) - 401 (C)/4283

Time : Three hours] [Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Section. Question No. 1 is *compulsory*. All questions carry equal marks.

1. Compulsory Question:

- (a) Why there is need of photo chemistry ?
- (b) Comment on the energy requirements of intersystem crossing.
- (c) Out of ortho, para products of photofries reaction, which is more stable and why ?

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- (d) How Photochemical reactions are useful in degradation of polymers ?
- (e) Show diagrammatically antarafacial and suprafacial shift.
- (f) What are Pericyclic reactions ?
- (g) Give one example of stereoselective reaction.
- (h) What is N-inversion in stereochemistry ?

SECTION – A

- 2. (a) Discuss Photochemistry of Cyclic ketones . 8
- (b) Discuss Jablonski diagram. 8
- 3. (a) Explain with suitable examples intramolecular reaction in Photochemistry. 8
- (b) Discuss Photoreduction reaction in detail. 8

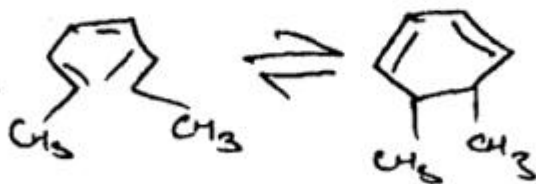
SECTION – B

- 4. (a) Discuss the Photorearrangement in Cyclohexadienones. 8
- (b) Describe in detail Hunsdiecker reaction ? 8
- 5. (a) What is Potamo-Buchi reaction ? Discuss its stereochemical consequences. 8

- (b) Discuss the methods of generation of free radicals.

SECTION - C

6. (a) Explain exo and endo reactions with special reference to Diel's Alder's reaction.
- (b) Discuss cope and claisen rearrangement in detail.
7. (a) Explain Various steps involved in the conversion of 5, 6- dimethyl 1, 3 cyclohexadiene into its cis isomer.
- (b) Explain the following reaction whether it is thermally or photochemically allowed.



SECTION - D

8. (a) Discuss stereochemistry of cyclic compounds starting from seven membered to nine membered ring.

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- (b) Discuss reduction methods in conversion of cyclohexanone to cyclohexanol. 8
- 9. (a) Discuss stereochemistry of 5 and 6 membered nitrogen containing cyclic compounds. 8
- (b) Comment on the statement" All stereospecific reactions are stereoselective in nature. 8

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