

K-407

Total Pages : 3

Roll No.

MCH-606

PHOTOCHEMISTRY AND STEREOCHEMISTRY

M.Sc. Chemistry (MSCCH)

4th Semester Examination, 2023 (Dec.)

Time : 2 Hours]

[Max. Marks : 35

Note : This paper is of Thirty Five (35) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

SECTION–A

(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Nine and Half (9½) marks each. Learners are required to answer any Two (02) questions only.

(2×9½=19)

1. Discuss what is Paterno Buchi reaction? Discuss its mechanism along with the stereochemical consequences.
2. Discuss the following photo dimerisation
 - (i) Concerted [2+2] cycloaddition.
 - (ii) Nonconcerted cycloaddition.
3. Discuss conformation and stability of monosubstituted cyclohexane.
4. Give mechanism of the Norrish type 1 process. How many types of carbonyl compounds give this reaction. Give one example for each compound.
5. Draw Jablonski diagram and explain radiative and non-radiative transitions.

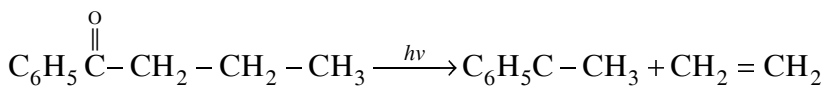
SECTION-B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Four (04) marks each. Learners are required to answer any Four (04) questions only. (4×4=16)

1. What type of excitation are possible in a compound containing carbonyl group on irradiation with UV light?

2. What is quantum yield? Give reason for high quantum yield.
3. Suggest mechanism for the following photoreaction.



4. Write short note on photolytic cleavage.
 5. Discuss photochemical hofman Loffer Freytug reaction.
 6. Give an account of rearrangement of 1,4 and 1,5 dienes.
 7. Which conformation of cyclohexane is more stable and why?
 8. Discuss photochemistry of azo compounds.
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