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Total Pages : 4 Roll No. .....

MSCCH-604

Photo Chemistry and Allied Chemistry

M.Sc. Chemistry (MSCCH)

3rd Semester Examination, 2023 (June)

Time : 2 Hours] **Max. Marks : 70**

Note : This paper is of Seventy (70) 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 answer 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 Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

(2×19=38)

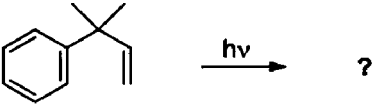
1. Write notes on the following :

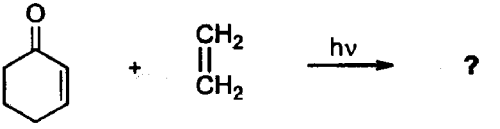
(a) Photofries rearrangement of ethers.

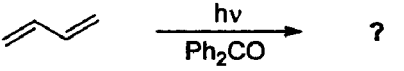
(b) Ionic liquids.

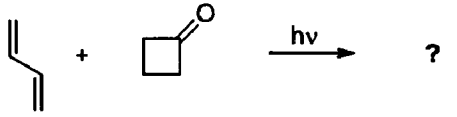
(c) Photochemical addition of alkene.

2. Write the major product of following reactions:

(a) 

(b) 

(c) 

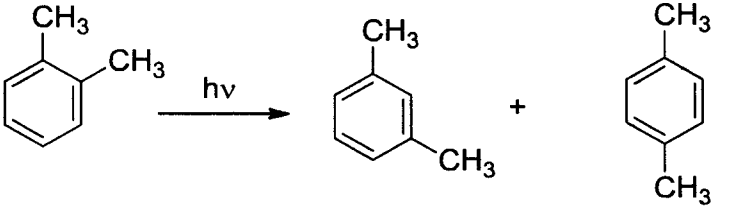
(d) 

3. Write notes on the following :

(a) Lumiketone rearrangement reactions.

(b) Green Catalyst.

4. Write the mechanism of the following reaction :



5. Write notes on the following :

(a) Frank-Condon principle.

(b) Singlet and triplet states.

(c) β-cleavage of carbonyl compounds.

SECTION–B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only. (4×8=32)

1. Write notes on the following :

(a) Flash photolysis.

(b) Photochemical laws.

2. Discuss Jablonskii diagram.

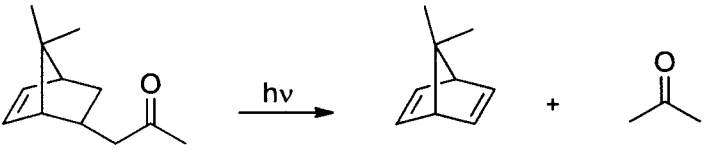
3. Explain photochemical dimerization of 1,3 and 1,4 diene.

4. What is Paterno-Buchi reaction? Discuss its mechanism along with the stereochemical consequences.

5. Discuss the mechanism of Barton reaction.

6. What are phase transfer catalysts? Explain with suitable examples.

7. Write the mechanism of following transformation:



8. What is the importance of photosensitiser in photochemistry? Which type of compounds can behave as photosensitiser?