

S-470

Total Pages : 4

Roll No.

MSCCH-604

Photo Chemistry and Allied Chemistry

M.Sc. Chemistry (MSCCH)

3rd Semester Examination, 2022 (Dec.)

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.

SECTION–A

(Long Answer Type Questions)

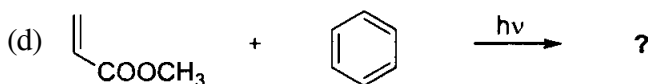
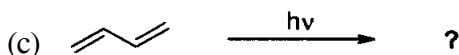
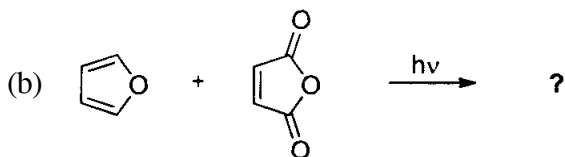
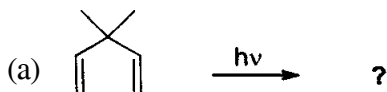
Note : Section 'A' contains Five (05) long answer type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.
(2×19=38)

1. Write notes on the following :

- (a) Di- π -methane rearrangement.
- (b) Photosensitization.

2. Discuss photoisomerisation reactions involving formation of Prismane and Dewar benzene as reaction intermediates.

3. Write the major product of the following reactions :

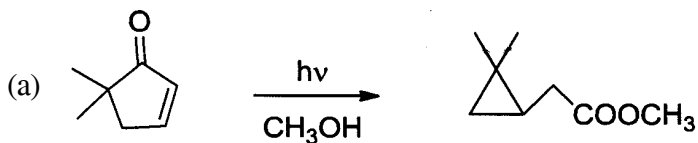


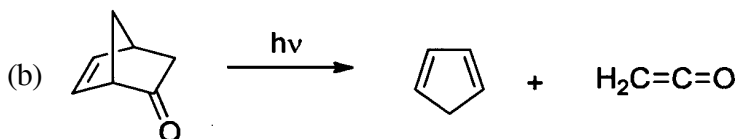
4. Write notes on the following :

(a) Chemiluminescence.

(b) Concerted [2+2] cycloaddition.

5. Suggest mechanism for the given reactions :





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. Explain the phenomenon of fluorescence and phosphorescence.
2. Discuss the photochemistry of cis-trans isomerization of alkenes.
3. Write notes in the following :
 - (a) Primary and secondary process.
 - (b) Frank-Condon Principle.
4. Explain Norrish type I and type II reactions with suitable examples.
5. Discuss the mechanism of Hoffmann-Löffler-Freytag reaction.

6. What are the basic principles of Green Chemistry?
7. Define quantum efficiency of a photochemical reaction and explain the reason for low and high quantum yield.
8. Write the mechanism of the following transformation :

