

K-392

Total Pages : 3

Roll No.

MSCCH-604

Photo Chemistry and Allied Chemistry

M.Sc. Chemistry(MSCCH)

3rd Semester Examination, 2023 (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. 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 Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

(2×19=38)

1. Write note on :
 - (a) Internal conversion.
 - (b) Florescence and phosphorescence.
 - (c) Photosensitizer.
2. Discuss the photochemistry of alkenes with references to cyclisation and dimerisation reaction.
3. Explain in details of basic principles of green chemistry with giving suitable examples.
4. Carbonyl compound give mainly four types of photochemical reaction. Give name of the reaction with one example each.
5. Explain in details Jablonski diagram. Give reason that the fluorescence spectrum observed always at lower wavelength than the phosphorescence.

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. Give qualitative description of Frank-Condon principle.

2. Write the mechanism of Di- π -methane reaction.
 3. Explain 1, 2 and 1, 3 photochemical addition reactions of aromatic compounds.
 4. Define Morse potential energy curve for diatomic molecules?
 5. Distinguish between photochemical and thermal reactions.
 6. Discuss the intramolecular photochemical reaction in β , γ unsaturated carbonyl compound.
 7. Write a short notes on solid phase organic synthesis in dry state on the following :
 - (a) Claisen rearrangement.
 - (b) Dieckmann condensation.
 8. Write a short notes on :
 - (a) Phase transfer catalysis.
 - (b) Green catalyst.
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