

AR-2512

**M. Sc. (Third Semester) Examination,
Nov.-Dec. 2017**

CHEMISTRY

Paper : Second

(Photochemistry)

Time Allowed : Three hours

Maximum Marks : 40

Note : Attempt questions of all two sections as directed.

Section-A

5×3=15

(Short Answer Type Questions)

Note : Attempt all five questions. Each question carries 3 marks. Maximum word limit is 100 words.

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1. Write a note on different types of excitations.

Or

Explain energy transfer in chemical reactions.

2. Write a note on gas phase photolysis or photo dissociation reactions.
3. Describe geometrical isomerism in photochemical reactions.

Or

Explain photochemical isomerisation in aromatic compounds.

4. Explain photochemical dimerisation with example.

Or

Explain photoreduction.

5. Write short note on any one of the following :
 - (i) Photo degradation of polymers
 - (ii) Photo Fries rearrangement

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(Long Answer Type Questions)

Note : Attempt all five questions. Each question carries 5 marks. Maximum word limit is 800 words.

6. Write a detailed note on quantum yield. Also discuss experimental determination of quantum yield.

Or

Discuss detail the fate of excited molecule.

7. Describe the effect of light intensity on the rate of photochemical reaction.

Or

What is the rate constant of a photochemical reaction?
How will you determine it?

8. Describe the photochemistry of compounds with reference to cyclisation reaction of alkenes or addition and substitution reactions in aromatic compounds.

9. Discuss the photochemistry of cyclohexadienone.

Or

Write a note on the following :

- (i) Paterno-Buchi reaction
- (ii) Norrish Type-II reaction

10. Write a detailed note on singlet molecular oxygen reactions and its applications.

Or

Write a note on :

- (i) Barton reaction
- (ii) Photo chemical formation of smog

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