647510 **Msc2CheC0210** **Seat No :_____**

M.Sc.(Chem.) Semester - 2 (*CBCS*) Examination
March/April -2019 (Old Course)
ORGANIC CHEMISTRY (CORE)

Time: 2:30 Hours **Marks: 70**

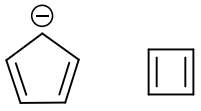
Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q.1 Answer any seven of the following ten questions. [14 Marks]

1. Define (i) Quantum yield (ii) Quantum efficiency

2. Which of the following compound (**a** or **b**) is aromatic ? Justify your answer.



(a) (b)

3. Discuss aromatic character of [18] annulene.

4. Give difference between excited singlet and triplet state.

5. Explain the following term: (a) HOMO (b) LUMO

6. State Huckel's rule for Aromaticity.

7. Describe classification of pericyclic reactions with example.

8. Describe various modes of electronic transition and write its energy order.

9. Explain: (i) Grothurs-Draper Law (ii) Stark-Einstein Law

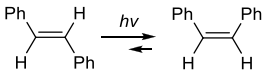
10. Draw the pie(π) Molecular Orbital for allylic cataion.

Q.2 Answer any two of the following three questions. [14 Marks]

1. Explain: (i) Conrotatory (ii) Disrotatory motion of orbitals.
2. Discuss woodward-hoffmann rule for electrocylic reaction with suitable example.
3. Discuss aromatic character of azulenes.

Q.3 Answer the following questions. [14 Marks]

1. Discuss Norish-II photochemical cleavages with example.
2. Explain mechanism of following photochemical cis-trans isomerization:



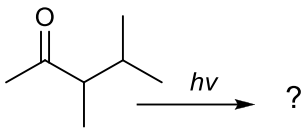
OR

Q.3 Answer the following questions. [14 Marks]

1. Draw Jablonski diagram and explain it briefly.
2. Discuss Norrish-I photochemical cleavages with example

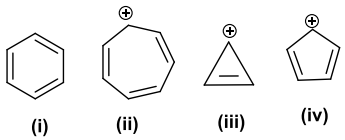
Q.4 Answer any two of the following three questions. [14 Marks]

1. Discuss cope rearrangement in detail.
2. Explain modes of supra-facial and antra-facial addition with suitable example.
3. Write primary and secondary photochemical processes for following reaction:



Q.5 Answer any two of the following four questions. [14 Marks]

1. Describe principle and mechanism of Paterno-Buchi.
2. Write a note on the Diels-alder reaction.
3. Classify the following compounds (**i** to **iv**) between aromatic & anti-aromatic system. Justify your answer:



4. Discuss claisen rearrangement with one example.

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