647510 **Msc2CheC0210** Seat No :_____

M.Sc.(Chem.) Semester - 2 (*CBCS*) Examination
August/September -2020 [OLD COURSE]
ORGANIC CHEMISTRY (CORE)

Time: 2:00 Hours **Marks: 56**

Instructions:

1. Figure to the right indicate marks.
2. There are five questions in the question paper.
3. Answer any four of the following questions.

Q.1 **Answer any seven of the following questions:** **14**

(i) Name the four types of pericyclic reactions.
(ii) What is 1,3-dipolar cyclo addition reaction?
(iii) What is photochemical energy?
(iv) What are annulenes?
(v) How are excited states named in photochemistry?
(vi) Explain sigmatropic reaction of hydrogen.
(vii) Define non aromaticity with suitable illustration.
(viii) Explain theory of pericyclic reactions.
(ix) Explain any one principle of photochemistry.
(x) What is Huckel's rule?

Q.2 **Attempt any two of the following questions:** **14**

(i) Mention Woodword Hofmann selection rules for cyclo addition reations.
(ii) Write a note on photochemistry of carbonyl compounds.
(iii) Explain the concept of aromaticity. How does it differ from anti aromaticity?

Q.3 **Answer the following questions:**

(i) Give a brief account of fullerenes (C60). **04**
(ii) Name the rearrangement in which 1,5-dienes are thermally rearranged by [3,3] sigmatropy. Explain the mechanism. **05**
(iii) Explain different transitions in photochemistry. **05**

OR

Q.3 **Answer the following questions:**

(i) Explain molecular orbital of 1,3-butadiene. **05**
(ii) How will you explain photochemistry of olefins? **04**
(iii) How cyclopentadiene find an application of Huckel's rule? **05**

Q.4 **(a)** **Attempt any two of the following questions:** **14**

(i) Write a note on conrotatory and disrotatory motions for electrocyclic ring opening and ring closure.
(ii) What is improved Jablonskii diagram? Explain in detail.
(iii) How is Huckel's rule applied to non-benzenoid aromatic compounds?

Q.5 **Answer any two of the following questions:** **14**

(i) Write in detail about Claisen rearrangement.
(ii) What are suprafacial and antarafacial rearrangements?
(iii) What are β-cleavage reactions in photochemistry?
(iv) Write in brief about azulene and hetero annulene.

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