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Total No. of Pages : 02

Total No. of Questions : 09

M.Sc.(Chemistry) (2015 to 2017) (Sem.-2)

ORGANIC CHEMISTRY – II

Subject Code : MSCH-201

M.Code : 71662

Time : 3 Hrs. Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. Candidate is required to attempt 5 (FIVE) questions in ALL.
2. Attempt one question each from SECTION A, B, C and D.
3. Section E is compulsory. All questions carry EQUAL marks.

SECTION-A

Q1. a. Explain briefly relationship between elements of symmetry and optical activity.

b. Discuss the chirality of allenes.

Q2. Comment on the configuration and conformational aspects of disubstituted cyclohexane derivatives. How their chirality depends upon the nature of substitutents R and R'.

SECTION-B

Q3. What do you understand by supramolecular catalysts? Discuss the role and mechanism of supramolecular catalysts.

Q4. Explain cryptands, fullerenes and crown ethers with suitable examples.

SECTION-C

Q5. Draw correlation diagram for [4n + 2] cycloaddition reaction and explain why it is thermally allowed and photochemically symmetry forbidden?

Q6. a. Discuss the mechanism of the photoreduction of benzophenone leading to the formation of benzpinacol.

b. Discuss with mechanism Barton reaction.

SECTION-D

Q7. Discuss with mechanism for following reactions :

a. Suzuki reaction

b. Stille reaction

c. Hydroboration

d. Metathesis of alkynes.

Q8. Account for the following :

a. Reaction of CO and hydrogen,

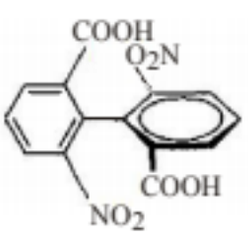
b. Carbonylation reaction

c. Phase transfer catalyst

d. Hydrosilylation

SECTION-E

Q9. a. Comment on the chirality of following biphenyls :



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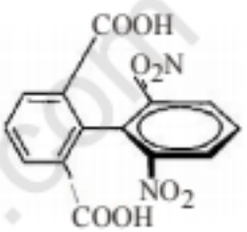

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b. Write the conformations of 1,3-dimethylcyclohexane. Discuss the chirality of *cis* and *trans*- isomers.

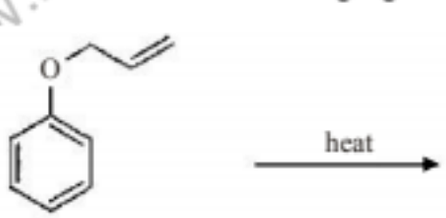
c. Differentiate enantioselectivity and diastereoselectivity.

d. What is the role of micelles in supramolecular chemistry?

e. What kind of interactions are possible in supramolecular complexes?

f. What is the principle of complementarity and pre-organization?

g. Show the product and mechanism of the following sigmatropic pericyclic reaction :



h. What do you understand by chemiluminescent reactions? Give one example.

i. Draw the mechanism of Negishi reaction.

j. Write an example of oxidation-addition reaction.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.