

[222/A51]

SEAT No. _____

No. of pages: 02

SARDAR PATEL UNIVERSITY
M.Sc. Semester-IV (Organic Chemistry) Examination
Friday, 26th October 2018


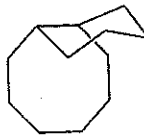




PS04CORCO3-Stereochemistry of Organic Compounds

Time: 02:00 pm to 05:00 pm

Marks: 70

08

Q.1 Select the correct answer.

- 1 _____ conformer of cyclohexane have lowest energy
(a) Chair form (b) Boat form
(c) Twisted boat form (d) Half chair form
- 2 _____ electron present in HOMO of ground state of 1,3-butadiene.
(a) 0 (b) 2
(c) 1 (d) 3
- 3 _____ are isomers that are mirror images of each other.
(a) Free radical (b) Resolution
(c) Enantiomers (d) Diastereomers
- 4 _____ are Thermally allowed orbital interactions in [4+4] cycloaddition.
(a) Supra-supra (b) Antara-antara
(c) Supra-antara (d) None of these
- 5 _____ of the following would be cis-conformer(s)?
(a)  (b) 
(c) Both (a) & (b) (d) None of these
- 6 _____ of the following is aromatic system.
(a)  (b) 
(c)  (d) 
- 7 Absolute chiral synthesis involve the formation of compound.
(a) Optically inactive (b) Resolving agents
(c) Optically active (d) None of these
- 8 Optical rotation ' α ' mathematically can be expressed by _____
(a) $180/\lambda(n_R - n_L)$ (b) $\lambda/180(n_L - n_R)$
(c) $180/\lambda(n_L - n_R)$ (d) $\lambda/180(n_R - n_L)$

(1)

(PTO)

- Q.2 Answer the following(Any Seven) 14
- 1 State 'chiral auxiliary' with suitable example.
 - 2 Discuss the reaction for generation of first chiral center.
 - 3 Draw and discuss the conformers of n-pentane emphasizing on their stability order.
 - 4 Discuss about the Prelog's Rule.
 - 5 Discuss the characteristic features of pericyclic reactions.
 - 6 State 'Huckel-Mobius' (H-M) method and predict the output of electrocyclization of butadiene and hexatriene.
 - 7 State the 'ring inversion' and discuss the ring inversion of cyclohexane.
 - 8 Define the term 'cotton effect' and give its importance.
 - 9 What do you understand by plane polarized light? State in brief RCP and LCP lights
- Q.3 A Write a note on: 06
- (i) Preferential crystallization
 - (ii) Chromatography and SMB techniques.
- B Write a note on Experimental procedure for resolution of (\pm) 2-Octanal 06
- OR
- B Classify asymmetric synthesis strategies. Outline any of the substrate – based asymmetric transformations. 06
- Q.4 A State the term 'conformational analysis. Discuss conformation of cyclohexane, with potential energy diagram 06
- B State the conformational features of 6-membered heterocycles. 06
- OR
- B Discuss conformation of Bicyclo[4.4.0]decane and its 9-methyl derivative. 06
- Q.5 A Write a sigmatropic rearrangement. 06
- B State FMO theory. Give its importance in understanding. 06
- OR
- B Write a note on: 06
- i) Group transfer reaction, ii) MO diagram of 1,3,5-hexatriene
- Q.6 A Write a note on: ORD and CD curves. 06
- B Discuss the structural aspects of cyclodextrins 06
- OR
- B What is 'Octant rule'? Discuss the octant rule in cyclohexanone. 06

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