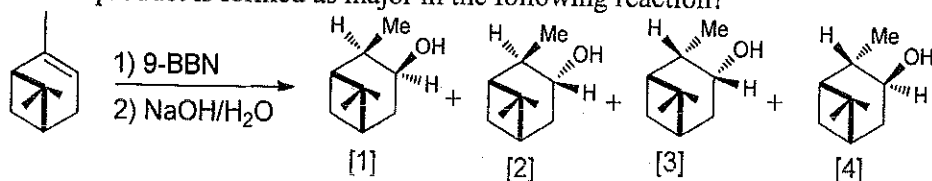


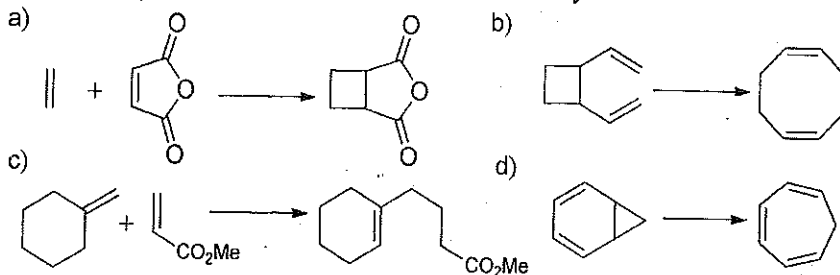
6) Which product is formed as major in the following reaction?



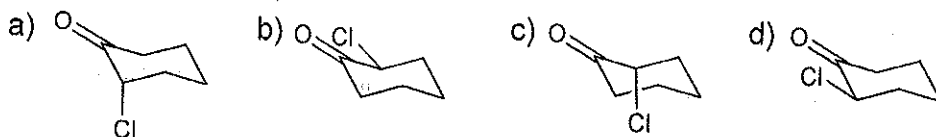
a) 1
c) 3

b) 2
d) 4

7) Which of the following reactions is not thermally allowed?



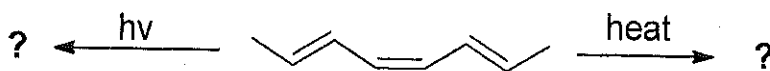
8) If α -chloro cyclohexanone give strong positive cotton effect than according to octant rule, structure is,



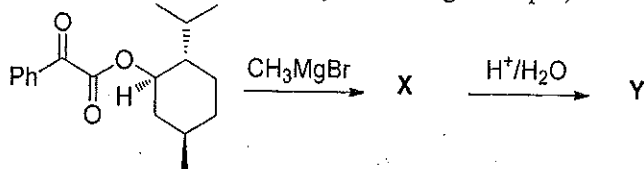
Q.2 Answer the following questions. (ANY SEVEN)

[14]

1. What is stereospecific reaction and explain it by bromination of cis and trans 2-butene?
2. Discuss the resolution of racemic mixture of alcohol.
3. Discuss the characteristic features of pericyclic reaction.
4. Give the outcome of the following reaction,



5. Discuss the prelog's rule by following example,



6. Draw the molecular orbital diagram of 1,3 butadiene and 1,3,5 hexatriene.
7. Explain that (+)-R-3-Methyl cyclohexanone shows positive cotton effect and Comment on its conformational stability using octant rule.
8. Show the Ring inversion and pyramidal inversion in cis-1,3 dimethyl piperidine.
9. Draw the conformation of n-pentane.

Q.3 [A] What do you mean by asymmetric synthesis? Classify it and explain it by taking suitable example of substrate based and chiral reagent based asymmetric synthesis. [06]

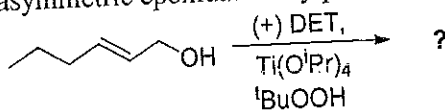
[B] Answer the following questions. [06]

1. Write note on resolution through kinetic asymmetric transformation of racemic mixture of enantiomer.
2. Discuss the Cram's rule for Diastereoselectivity of product.

OR

[B] Answer the following questions. [06]

1. Describe experimental method for resolution of racemic mixture of 2-octanol.
2. Explain Sharpless asymmetric epoxidation by plausible mechanism,



Q.4 [A] Discuss the stereoelectronic effect in heterocyclic compounds (in substituted pyran). [06]

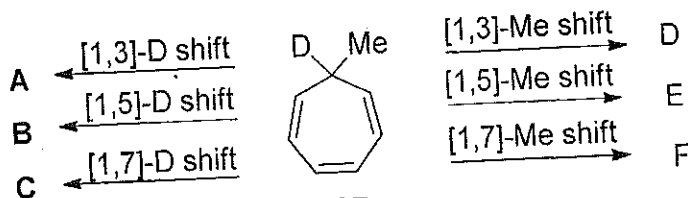
[B] Discuss the conformational analysis of n-butane and meso butane 2,3-diol. [06]

OR

[B] Discuss the conformational analysis of mono methyl and di-methyl substituted cyclohexane. [06]

Q.5 [A] State the FMO theory and Explain ring closing reaction of 1,3-butadiene and 1,3,5-hexatriene by FMO method. [06]

[B] Complete the following sigmatropic rearrangement with numbering system, [06]



OR

[B] Answer the following questions. [06]

1. Write a note on Ene reaction.
2. What is Diels-Alder reaction? Explain Endo and Exo product and its stability.

Q.6 [A] Write note on the structural features of cyclodextrin and its uses. [06]

[B] Write an application of ORD and CD. [06]

OR

[B] Answer the following questions. [06]

1. Discuss in brief about axial helix rule.
2. Discuss the structural features of DNA.

