



K24P 1067

Reg. No. :

Name :

**Second Semester M.Sc. Degree (CBCSS – OBE – Regular)
Examination, April 2024
(2023 Admission)
Chemistry
MSCHE02C10/MSCHD02C10 : ORGANIC CHEMISTRY – II**

Time : 3 Hours

Max. Marks : 60

SECTION – A

Short answer questions. Answer **any five** questions. **Each** question carries **3** marks.

1. Distinguish between configuration and conformation with examples.
2. State axial haloketone rule.
3. What is enantiomeric excess ? How is it determined experimentally ?
4. Explain prochiral center with an example.
5. Write two examples of [3, 3] sigmatropic rearrangement.
6. Write the differences in reaction conditions and products of Woodward and Prevost's hydroxylation. **(5×3=15)**

SECTION – B

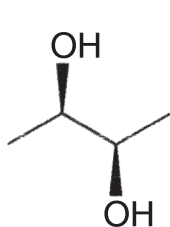
Paragraph questions. Answer **any three** questions. **Each** question carries **six** marks.

7. Draw the preferred conformations of the following compounds :
 - a) Trans-4-ter-butyl cyclohexanol
 - b) Trans-decalin
 - c) Cis-4-ter-butyl cyclohexanol.

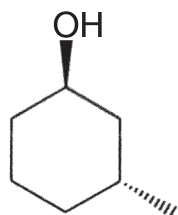
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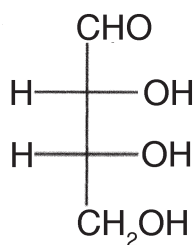
8. Assign R and S configuration to the following compounds :



(a)



(b)



(c)

9. Explain Fluxional molecules with two examples.
 10. Write the synthesis of (S)-(-)-ipfenol from (S)-(-)-leucine ?
 11. How will you convert methanal to 2-phenyl ethanal ?

(3×6=18)

SECTION – C

Essay type questions. Answer **any three** questions. **Each** question carries **nine** marks.

12. Write an essay on octant rule and its applications.
 13. Write an essay on sharpless asymmetric epoxidation explaining the stereochemistry, applications and reagents used.
 14. Explain chiral pool synthesis with two specific examples.
 15. Explain electrocyclic ring closure and ring opening of a $4n$ and $4n+2$ system with frontier molecular orbital theory.
 16. Write a note on synthetic utility of lithium aluminum hydride and sodium borohydride including mechanism, differences and modified reagents. (3×9=27)

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