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PAH-003-010405 Seat No. _____

M. Sc. (Sem. IV) (CBCS) Examination

August - 2020

Organo-Pharmaceutical Chemistry : C(OP) - 403

(Stereo - Chemistry) (Old Course)

Faculty Code : 003

Subject Code : 010405

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) All Questions are compulsory & carries equal 14 marks.

(2) Draw suitable diagram / Scheme wherever necessary.

1 Answer any **seven** of the following ten questions : **14**

(a) What are stereoisomers? Give name of different kinds with one example.

(b) Show gauch interaction in Methylcyclohexane.

(c) What is anomeric effect? Explain with suitable example.

(d) Calculate total isomer, optical isomer and meso-isomer for (2S,3r,4R),2,3,4pentane triol

(e) Draw syn and anti forms of benzaldoxime and give full name of these isomer.

(f) Differentiate chirogenicity and stereogenicity with suitable example.

(g) Write Karplus equation and Bothner modification.

(h) Draw the flying wedge formula for R (-) 2,3 dihydroxypropanal.

(i) Write the limitation of Fisher projection.

(j) Write the difference between stereospecific and stereo selective reaction.

2 Answer any **two** out of the following : 14

(a) What is resolution ? Discuss methods of resolution.

(b) Discuss the effect of substitution on reactivity for various confirmation of 2-Bromo-4 phenyl cyclohexanol.

(c) Discuss optical isomerism of organic compounds containing two different asymmetric carbon atoms.

3 Answer the followings : 14

(a) Discuss the stereochemistry of substituted cyclobutane with respect to the coupling constant.

(b) Give Baeyer strain theory for cyclic system.

OR

3 Answer the followings : 14

(a) Define the term "Dihedral angle" and effect of substitution on coupling constant for cyclopropane derivatives.

(b) Explain the conformation of mono-methyl-cyclohexane with special reference to the diastereomerism.

4 Answer the followings : 14

(a) Discuss Houk model to explain reactivity of chiral alkenes.

(b) Discuss different conformation of cyclohexane in details.

5 Answer the followings : (Any **Two**) 14

(a) Write a note on cram's rule for chiral ketones.

(b) Explain enantiotropic ligands and phase by the reduction of pyruvic acid.

(c) What are locking groups? Cis-1, 4-ditertiary butyl cyclo-hexane has boat conformation. Justify.

(d) Give the synthesis of stereo regulated polymerization.
