

Code No.: 8636

FACULTY OF SCIENCE
M.Sc. I Semester Examination, May/June 2012

CHEMISTRY

Paper II

(Organic Chemistry)

Time : 3 Hours]

[Max. Marks : 80

Answer **all** questions.

Section A

(Marks : 4 × 8 = 32)

- Draw the structures of different tartaric acids and explain their symmetry elements.
 - What are allenes? Describe their structures and explain their stereoisomerism.
- Formulate, giving mechanism, the reaction between trans-2-pentene and OsO_4 .
 - Explain a-elimination, reaction giving examples.
- Write the conformational structure of sucrose and D-ribose.
 - Present a brief outline of Merrifield's solid phase synthesis.
- Explain why isoquinoline is a stronger base than indole?
 - Outline a simple synthesis of acridines.

Section B

(Marks : 4 × 12 = 48)

- How can a mixture of optically active organic acids be separated using diastereomer salt formation method.
 - Discuss the use of chiral chromatography and asymmetric transformation resolution methods.
- Or
- Reaction of acetophenone with hydroxylamine results in the formation of a mixture of Oximes. How can the configurations of two oximes be established?
 - Discuss the stereoisomerism of chiral biaryls.

[P.T.O.]

6. (a) Describe the spectral and chemical evidence for the anti-addition of bromine to alkenes.
- (b) State and explain pyrolytic syn-eliminations and a-eliminations.

Or

- (c) What is meant by transition state? Describe the significance of transition state for a chemical reaction.
- (d) Explain giving examples the importance of chemical trapping of cross-over expts. in determining the mechanism of reaction.
7. (a) Draw the conformational structures of lactose and maltose and explain their features.
- (b) Outline the structural features and importance of chitin.

Or

- (c) Describe a synthesis of Alanylglycine.
- (d) Write a note on acidic and enzymatic hydrolysis of proteins.
8. (a) Discuss the synthesis and reactivity of coumarins.
- (b) Explain the importance of quinolines. Name a quinoline derivative which is used as a drug and describe its synthesis.

Or

- (c) Describe the synthesis and reactivity of indole.
- (d) Differentiate, with examples, between the reactivities of benzofurans and benzothiophenes.
-