Sr. No. 325110

December 2023

B.Sc. (Life Science) Re-appear - I SEMESTER

Chemistry I - Conceptual Organic Chemistry (BLS-103)

Time: 3 Hours **Max. Marks:75**

Instructions:
1. *It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.*
2. *Answer any four questions from Part -B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART -A

Q1 (a) What are meso compounds? (1.5)

(b) Describe Threo and Erythro isomers. (1.5)

(c) What is ozonolysis? (1.5)

(d) Write the Fischer projection formula of D and L-Glyceraldehyde. (1.5)

(e) Write the product formed during reaction of acetone with hydrogen cyanide? (1.5)

(f) What is the stability order of 1^o, 2^o, 3^o free radicals? (1.5)

(g) What is E/Z notation? Explain with example. (1.5)

(h) What is difference between elimination and substitution? (1.5)

(i) What is Tollen's reagent? (1.5)

(j) What is dehydrohalogenation? (1.5)

PART -B

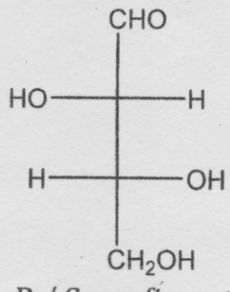
Q2 (a) Explain the relative stability order of various conformations of cyclohexane. (5)

(b) Differentiate between Enantiomer and Diastereomers. (5)

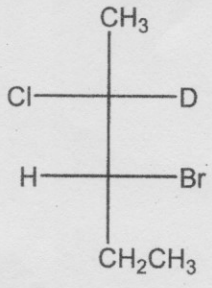
(c) Define (i) Optical Activity (ii) Specific rotation (5)

Q3 (a) Convert the following fisher molecule into Sawhorse and Newman representation and also determine R/S configuration of chiral carbons (8)

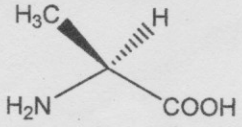
(i)



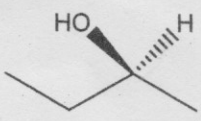
(ii)



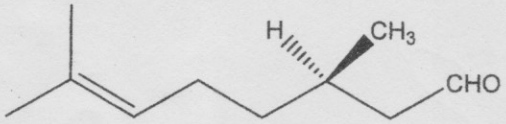
(b) Assign R / S configuration of following (4.5)



(i)



(ii)



(iii)

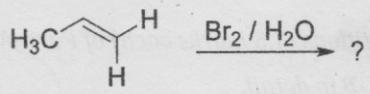
(c) What is Restricted rotation? Explain with example. (2.5)

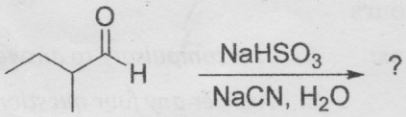
Q4 (a) What are substitution reactions? Explain SN^1 and SN^2 type of reactions with (9)

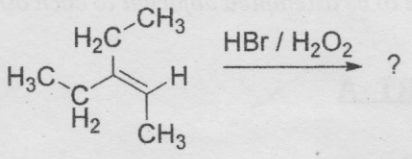
(b) Write the mechanism of following reactions (6)
(i) Friedal Craft Acylation (ii) Sulphonation

Q5 (a) Write a note on (i) Hydroboration oxidation of alkene (ii) Cannizzaro Reaction (9)
(iii) Cross Aldol Reaction

(b) Complete the following reactions (6)

(i) 

(ii) 

(iii) 

Q6 (a) Write a note on (i) Baeyer-Villiger Oxidation (ii) Wolff-Kishner Reduction (iii) (9)
Rosenmund Reduction

(b) What are Elimination reactions? Explain the mechanism of E1 and E2 reactions (6)
with suitable examples.

Q7 Write brief note on followings (15)
(i) Hofmann's elimination (ii) Saytzeff's rule (iii) CIP Rule
(iv) Anti-Markovnokov's rule (v) Iodoform reaction

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