Reg. No.: .....

Name: .....

University of Kerala

U8837

Second Semester FYUGP Degree Examination, April 2025

Discipline Specific Core Course

CHEMISTRY

UK2DSCCHE100 - ORGANIC CHEMISTRY - I

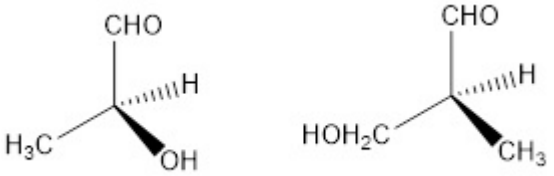
Academic Level: 100-199

Time: 1 Hour 30 Minutes(90 Mins.) **Max. Marks: 42**

Part A. 6 Marks.Time:6 Minutes.(Cognitive Level:Remember(RE)/Understand(UN)) Objective Type. 1 Mark Each.Answer all questions

Qn No.	Question	CL	CO
1	The unique property of carbon that enables it to form the largest number of compounds is known as	RE	1
2	Draw any two diastereomers of 2,3-dihydroxybutanedioic acid.	RE	3
3	Define pericyclic reactions.	UN	1
4	Give the dihedral angle in staggered ethane?	UN	2
5	Account for the optical inactivity of mesotartaric acid.	UN	3
6	Why is tert-butyl carbocation more stable than ethyl carbocation?	UN	4

Part B.8 Marks.Time:24 Minutes.(Cognitive Level:Understand(UN)/Apply(AP))Short Answer. 2 marks each.Answer all questions

Qn No.	Question	CL	CO
7	Why does the basicity of amines decrease when attached to an aromatic ring, such as in aniline?	UN	4
8	The dehydration of ethanol produces ethene and water. Write the chemical equation and name the type of reaction	UN	1
9	Convert the following structures to Fischer representations 	AP	2
10	Interpret the following . Melting points and boiling points of diastereomers can be used to separate them but these methods do not apply to separate enantiomers.	AP	3

Part C. 28 Marks.Time:60 Minutes (Cognitive Level:Apply(AP)/Analyse(AN)/Evaluate(EV)/Create(CR)) Long Answer.7 marks each.Answer all 4 Questions choosing among options * within each question

Qn No.	Question	CL	CO
11	A) How do steric strain and torsional strain influence the stability of the chair and boat conformations? OR B)	AP	2, 2

Qn No.	Question	CL	CO
	Identify the different elements of symmetry observed in a) H_2O b) *cis*-dichloroethene c) benzene d) *trans*-1,3-dichlorocyclobutane		
12	A) Analyse the importance of arrows and their movements in organic chemistry. OR B) Analyse elimination and rearrangement reactions citing examples for each.	AN	1, 1
13	A) Predict the number of stereoisomers of 2,3-dibromobutanoic acid. Identify and draw the possible enantiomers and diastereomers. Assign the absolute configuration of the enantiomers. OR B) Disymmetry is an essential condition for optical activity. Evaluate this statement using tartaric acid as an example	EV	3, 3
14	A) Formulate a stepwise mechanism explaining the role of hyperconjugation in the stability of a given alkene system. OR B) Predict how the introduction of CH_3 group at the ortho, meta, and para positions of phenol would alter its acidity. Justify your reasoning with representative resonance structures.	CR	4, 4