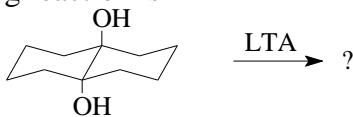
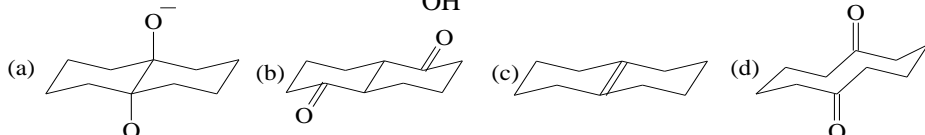
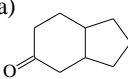
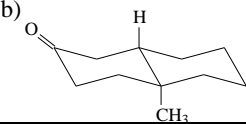
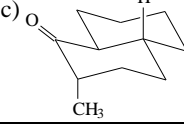
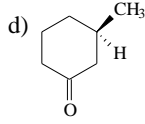
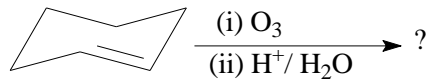
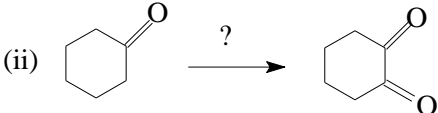
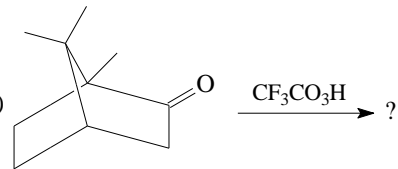
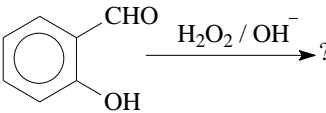


c)	The product of the following reaction is  	K2	CO1
d)	Racemic modification can be achieved by a) First order asymmetric transformation c) Second order asymmetric transformation b) the use of enzymes d) all the above	K2	CO1
e)	Which among the following a)  b)  c)  d)  will exhibit +ve Cotton effect?	K2	CO1
SECTION B			
Answer any THREE of the following		(3 x 10 = 30)	
3	Show the mechanism and potential energy diagram for kinetically controlled and thermodynamically controlled product formation of a reaction between 1,3-butadiene and HBr.	K3	CO2
4	Construct the mechanism for the following rearrangements choosing a suitable example for each: (i) Hoffmann rearrangement (ii) Benzil-benzilic acid	K3	CO2
5	Sketch the mechanism for the following reactions: (i)  (ii) 	K3	CO2
6	a) Explain the chemical method of racemisation through anion intermediate formation. (5) b) Discuss the optical isomerism exhibited by biphenyls and spiranes. (5)	K3	CO2
7	(a) Discuss the stereochemistry of the acetolysis reaction of 2-phenyl-3-pentyl tosylate and 3-phenyl-2-pentyl tosylate. (8) (b) How the stable conformation of 1,2-dibromocyclohexane is classified by dipole moment measurements? (2)	K3	CO2
SECTION C			
Answer any TWO of the following		(2 x 12.5 = 25)	
8	(a) "Bromination of 2-methyl propane is more selective than chlorination". Explain with mechanism and potential energy diagram. (6) (b) Derive Hammett equation and explain the effect of substituents upon the acidity of benzoic acid. (6.5)	K4	CO3
9	(a) Explain the mechanism of Beckmann and abnormal Beckmann rearrangement. (b) Predict the product and explain the mechanism of the following reactions: (6.5) (i)  (ii) 	K4	CO3
10	(a) Explain the mechanism of any one synthetic applications aq.CrO ₃ and acidified KMnO ₄ . (6) (b) Explain the use of chiral derivatizing agents (CDAs) in NMR spectral techniques and mention their characteristics. (6.5)	K4	CO3
11	(a) Why the deamination of (Ph)(Ph')(OH)CCH(NH ₂)CH ₃ does not follow Curtin-Hammet principle? Explain. (7)	K4	CO3

(b) Explain the pyrolysis reaction of xanthates.

(5.5)

SECTION D

Answer any ONE of the following

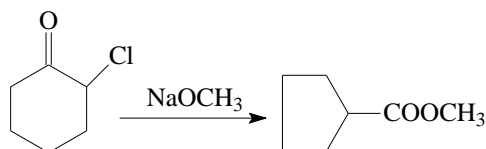
(1 x 15 = 15)

12 (a) Summarize the role of the following methods in determining the reaction mechanism: (i) Product analysis (iii) Detection of reaction intermediates

(6)

(b) Predict the mechanism of the following reaction:

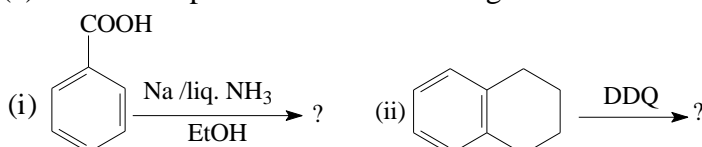
(4)



K5

CO4

(c) Predict the product of the following reaction with mechanism:



13 Discuss about the following.

(a) Reaction of *cis* & *trans* 2-aminocyclohexanol with HONO.

(5)

(b) Reaction of erythro-3-bromo-2-butanol with HBr.

(5)

(c) 2-alkylketone effect

(5)

K5

CO4

SECTION E

Answer any ONE of the following

(1 x 20 = 20)

14 (a) Write brief explanatory notes on the following methods in determination of the reaction mechanism:

(8)

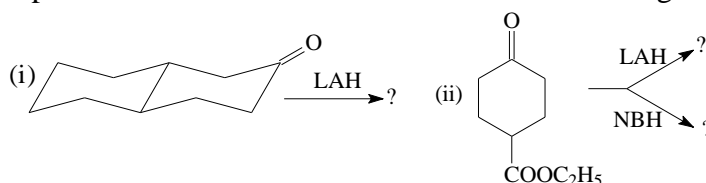
(i) Addition of a suspected intermediate in von-Richter rearrangement.

(ii) Mechanistic implications of rate law of diazotization of aniline and benzoin condensation reaction.

(b) Compile the mechanism of *para*- Claisen and abnormal Claisen rearrangement.

(c) Predict the product and write the mechanism of the following reactions.

(6)



K6

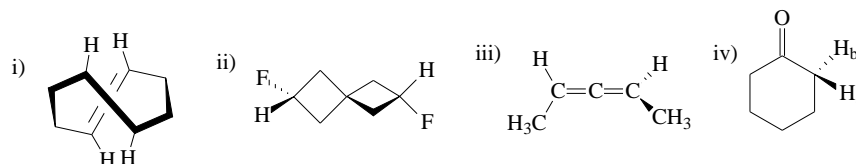
CO5

15 (a) Write the mechanism of McFadyen-Steven's and MPV reduction.

(6)

(b) Classify the following as point/axial/plane chiral molecules and assign R/S notation.

(8)



K6

CO5

(c) Explain Cram's and Prelog rules with suitable examples.

(3 +3)

@@@@@