Reg. No.

## G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI - 628 502.



**UG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2024.** 

(For those admitted in June 2021 and later)

## **PROGRAMME AND BRANCH: B.Sc., CHEMISTRY**

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
III	PART-III	CORE	U21CH305	ORGANIC CHEMISTRY-II
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Date & Session: 05.11.2024 / AN

## Time : 3 hours Maximum: 75 Marks

Course Outcome	Bloom's K-level	Q. No.	<u>SECTION – A (</u> 10 X 1 = 10 Marks) Answer <u>ALL</u> Questions.		
CO1	K1	1.	Chloral is aa) trichloro acetoneb) trichloro aceticacidb) trichloro acetaldehydec) trichloro aceticacidd) trichloro chotonaldehyde		
CO1	K2	2.	Schiff's reagent is answered bya) ketones onlyb) aldehydes onlyc) both aldehyde & ketonesd) acids only		
CO2	K1	3.	Malonic acid containscarboxylic acid groups.a) 1b) 3c) 2d) many		
CO2	K2	4.	Predict, Which dicarboxylic acid is decolourise acidified KMnO <sub>4</sub> solution on warming? a) citric acid b) formic acid c) oxalic acid d) sulphuric acid		
CO3	K1	5.	Mustard gas was used as a a) war gas b) insecticide c) herrrbicide d) refrigerant		
CO3	K2	6.	The compound used as sleeping drug is a) sulphone b) sulphonal c) mustard gas d) soporific		
CO4	K1	7.	The phenomenon in which the isomers, differ in the relative position of their atoms and are in dynamic equilibrium is calleda) prototropyb) tautomerismc) enantiomerismd) epimerism		
CO4	K2	8.	Identify the presence of active methylene group in the following.a) ethyl acetateb) methyl acetatec) acetoacetic esterd) all of these		

CO5	K1	9.	Which conformation of cyclohexane is more stable?		
			a) boat form b) chair form		
		1.0	c) half chair form d) twistboat form		
CO5	K2	10.	Find the structure of cyclopentane.		
			a) $\Box$ b) $\Box$ c) $\bigcirc$ d) $\bigcirc$		
Course Outcome	Bloom's K-level	Q. No.	<u>SECTION – B (</u> 5 X 5 = 25 Marks) Answer <u>ALL Q</u> uestions choosing either (a) or (b)		
CO1	K3	11a.	Elaborate the preparation of any two of the following (2.5M Each)		
CO1	K3	11b.	i) Aldol ii) Crotonaldehyde iii) Acrolein ( <b>OR</b> )		
			Identify the oxidation products of the following (1+2+2 M) a. CCl <sub>3</sub> CHO $\xrightarrow{\text{HNO}_3}_{[O]}$ b. H <sub>2</sub> C=CHCHO $\xrightarrow{\text{Ammoniacal AgNO}_3}_{[O]}$ c. H <sub>2</sub> CHC=CHCHO $\xrightarrow{[O]}$		
CO2	K3	12a.	Complete the following, on action of heat (1M Each)		
			a. $H_2C' \qquad \Delta$ COOH COOH b. $COOH \qquad \Delta$ cooh		
CO2	K3	12b.	(OR) How will you utilise the following compounds to prepare urea? (any 2) (2.5M Each) i) ammonium cyanate ii) using NH <sub>3</sub> & CO <sub>2</sub> iii) using CaC <sub>2</sub> & N <sub>2</sub>		
CO3	K4	13a.	Examine the chemical properties of organozinc compounds. <b>(OR)</b>		
CO3	K4	13b.	Compare the preparation and uses of thioalcohols and thioethers.		
CO4	K4	14a.	Examine synthetic uses of ethylacetoacetate. (OR)		
CO4	K4	14b.	Categorize tautomerism and explain any one.		
CO5	K5	15a. 15b.	Deduce the IUPAC name of the below mentioned structures. i) $(i)$		
CO5	K5	150.	<b>(OR)</b> Evaluate the Baeyer strain theory in order to the stability of cycloalkanes.		

Course Outcome	Bloom's K-level	Q. No.	<u>SECTION – C (</u> 5 X 8 = 40 Marks) Answer <u>ALL</u> Questions choosing either (a) or (b)
CO1	K3	16a.	Develop the following reactions: (2M Each) a) Clemmensen reduction b) Wolf- Kishner reduction
			<ul><li>c) Meerwin – Pondorf reduction</li><li>d) Wittig reaction</li></ul>
0.01	170	1 (1	(OR)
CO1	K3	16b.	Identify the suitable reagent conditions for the following conversions. (2M Each) a. $R \rightarrow OH \xrightarrow{?} R \rightarrow OH \xrightarrow{?} R \rightarrow OH + H_2$
			b. CH <sub>3</sub> COOH + HCOOH $\xrightarrow{?}$ CH <sub>3</sub> CHO + CO <sub>2</sub> + H <sub>2</sub> O
			c. $CH_3COC1 + H_2 \xrightarrow{?} CH_3CHO + HC1$
			d. HC $\equiv$ CH + H <sub>2</sub> O $\xrightarrow{?}$ CH <sub>3</sub> CHO
CO2	K4	17a.	8 31 8
000	τ <i>τ Α</i>	1 /7/1	preparation and uses of each. (OR)
CO2	K4	17b.	Analyse the synthetic applications of the following (3+3+2 M) i) Urea ii) acetic anhydride iii) esters
CO3	K4	18a.	
CO3	K4	18b.	Analyze the synthetic application of Grignard reagent.
CO4	K5	19a.	Justify your views on the reactivity of compounds having active methylene group. <b>(OR)</b>
CO4	K5	19b.	Interpret the following compound (ethylacetoacetate) with
			their chemical properties:
			$c_{2}H_{5}OOCHC$ $c_{2}H_{5}OOCH_{2}C$ $\rightarrow OH$ $\rightarrow OH$ $\rightarrow OH$ $H_{3}C$ and $H_{3}C$
			$H_3C'$ and $H_3C'$
CO5	K5	20a.	Assess the preparation of the following from its
CO5	K5	20b.	cycloalkanes. (OR)
			Predict the products of the following and give the name and
			structure. (2M Each)
			a. $\rightarrow$ + H <sub>2</sub> $\xrightarrow{\text{Ni}, 350 \text{ K}}$ b. $\square$ + H <sub>2</sub> $\xrightarrow{\text{Ni}, 390 \text{ K}}$
			c. $\longrightarrow$ + H <sub>2</sub> $\xrightarrow{\text{Ni, 570 K}}$ d. $\searrow$ + Br <sub>2</sub> $\longrightarrow$