Reg. No. | | | | | | | | |

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

UG DEGREE END SEMESTER EXAMINATIONS - APRIL 2025.

(For those admitted in June 2021 and later)

PROGRAMME AND BRANCH: B.Sc., CHEMISTRY

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
V	PART - III	CORE	U21CH509	ORGANIC CHEMISTRY-III

Date & Session: 30.04.2025/FN **Time: 3 hours** **Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	**SECTION – A (10 X 1 = 10 Marks)** **Answer ALL Questions.**
CO1	K1	1.	Which of the following compound would show optical isomerism? a) CH_3 – CH(OH) COOH b) H_2N $CH(CH_3)_2$ c) $(CH_3)_2$ CHCHO d) H_2N CH_2 COOH
CO1	K2	2.	What are diastereomers? a) Molecules with non-superimposable mirror images b) Molecules with superimposable mirror images c) Molecules which do not have non-superimposable mirror images d) None of the mentioned
CO2	K1	3.	A racemic mixture is formed by mixing two. a) Chiral compounds b) Meso compounds c) all compounds d) Optically Active compounds
CO2	K2	4.	Which of the following conformation is more stable for 1,2-ethyleneglycol? a) Gauche conformation b) anti conformation c) syn conformation d) eclipsed conformation
CO3	K1	5.	Aromatic compounds are _____. a) planar cyclic compound b) obey Huckel's rule c) Conjugated d) All the above
CO3	K2	6.	Find the deactivating group. a) $–CF_3$ b) –OH c) $–NH_2$ d) $-CH_3$
CO4	K1	7.	Choose the more aromatic compound from the following? a) Furan b) Thiophene c) pyrrole d) none of the above
CO4	K2	8.	Isoquinoline can be synthesised by. a) Bischler-Nepieralski Skraup synthesis b) Skraup synthesis c) Fischer synthesis d) Lipp's synthesis
CO5	K1	9.	_____class of dyes is known for their high light fastness and resistance to fading in sunlight. a) acid dyes b) vat dyes c) direct dyes d) base dyes
CO5	K2	10.	Find the auxochrome in azodyes. a) Amino group b) hydroxyl group c) Azo group d) both amino and hydroxyl group

Course Outcome	Bloom's K-level	Q. No.	**SECTION – B (5 X 5 = 25 Marks)** **Answer ALL Questions choosing either (a) or (b)**
CO1	K3	11a.	Explain the optical activity in allenes and spiranes. **(OR)**
CO1	K3	11b.	Illustrate the type of structural isomerism with examples.
CO2	K3	12a.	Define geometrical isomerism and which type of compound exhibit geometrical isomerism? **(OR)**
CO2	K3	12b.	Discuss the conformational analysis of n- butane.
CO3	K4	13a.	Figure out the mechanism and application of Friedel-Crafts reaction. **(OR)**
CO3	K4	13b.	Discuss briefly about the Ortho/para ratio- Orientation by Korner's absolute method.
CO4	K4	14a.	Explain the preparation and physical, chemical properties of pyrrole. **(OR)**
CO4	K4	14b.	Formulate the synthesis of Indole. Briefly explain its properties.
CO5	K5	15a.	What is a dye? How dyes are classified based on structure? **(OR)**
CO5	K5	15b.	Give the preparation and uses of malachite green and indigo dyes.

Course Outcome	Bloom's K-level	Q. No.	**SECTION – C (5 X 8 = 40 Marks)** **Answer ALL Questions choosing either (a) or (b)**
CO1	K3	16a.	How will you assign the absolute configuration of isomers by RS notation > Illustrate briefly the sequence of rules? **(OR)**
CO1	K3	16b.	Distinguish i) Enantiomers and diastereoisomers and ii) Stereosective and stereospecific reactions with examples.
CO2	K4	17a.	Analyse the conformation of Cycloalkane and monosubstituted Cycloalkane. **(OR)**
CO2	K4	17b.	Discuss the relative stability of conformers on the basis of steric effect, dipole-dipole interaction, H- bonding.
CO3	K4	18a.	Analyze Aromatic Nucleophilic substitutions- unimolecular and bimolecular reactions with mechanism. **(OR)**
CO3	K4	18b.	Examine the mechanism of aromatic halogenations and nitration reaction.
CO4	K5	19a.	Give Skraup synthesis of Quinoline and the Electrophilic substitution reactions of it. **(OR)**
CO4	K5	19b.	Discuss the preparation of pyridine and nucleophilic substitution reaction in pyridine.
CO5	K5	20a.	What are anthraquinone dyes. Describe the types, preparation and uses of two anthraquinone dyes. **(OR)**
CO5	K5	20b.	How will your synthesis anthracene? Explain the structure of it?