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

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

UG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2025.
(For those admitted in June 2021 and later)

PROGRAMME AND BRANCH: B.Sc., CHEMISTRY

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
VI	PART-III	CORE	U21CH611	ORGANIC CHEMISTRY-IV

Date & Session: 07.11.2025/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.	Glucose and Mannose are _____. a) Epimers b) C2 epimers c) Anomers d) Isomers
CO1	K2	2.	Ring structure of glucose arises due to _____. a) Its carbohydrate nature b) Mutarotation c) Dextro rotators d) Four chiral carbons
CO2	K1	3.	The IUPAC name of picric acid is _____. a) 2,4,6-trinitrophenol b) 2,4,6-trinitro-1-hydroxy hexane c) 2,4,6-trinitro-1-hydroxy benzene d) 1,3,5-trinitro-6-hydroxy benzene
CO2	K2	4.	o-xylene on oxidation yields _____. a) tere-phthalic acid b) phthalic anhydride c) iso-phthalic acid d) none
CO3	K1	5.	Pinacols are _____. a) alcohols b) monohydric alcohol c) dihydric alcohols d) 1,2 diols
CO3	K2	6.	Which of the following is a sigmatropic rearrangement? a) Claisen b) Hofmann c) Curtius d) Pinacole
CO4	K1	7.	citral on oxidation gives _____. a) citric acid b) dipentene c) geranic acid d) geraniol
CO4	K2	8.	Citral and neral are the example of _____. a) optical isomers b) conformational isomers c) cis-trans isomers d) none of these
CO5	K1	9.	In NMR, the chemical shift position of TMS is _____. a) 0 b)10 c) -10 d) none of these
CO5	K2	10.	The longer the conjugated system, the wavelength of absorption maximum will be _____. a) longer b) shorter c) longer or shorter d) none of these

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.	Write the differences between glucose and fructose. **(OR)**
CO1	K3	11b.	What are diastereoisomers? Illustrate with an example.
CO2	K3	12a.	Discuss the mechanism of Cannizaro reaction **(OR)**
CO2	K3	12b.	Write short notes on ortho effect.
CO3	K4	13a.	Write briefly on Benzidine rearrangement. **(OR)**
CO3	K4	13b.	Explain intramolecular and intermolecular rearrangements.
CO4	K4	14a.	What are terpenoids? How are they classified? **(OR)**
CO4	K4	14b.	What is isoprene rule? Give example
CO5	K5	15a.	How are the structures of the following compounds indicated in the IR spectral data? Give reasons. **(OR)**
CO5	K5	15b.	Between cis and trans stilbenes, which will absorb at longer wavelength? Why?

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 convert a) Glucose to Arabinose b) Arabinose to Glucose? **(OR)**
CO1	K3	16b.	How will you convert glucose into fructose and fructose into glucose?
CO2	K4	17a.	Discuss the mechanism of Perkin and Claisen condensation. **(OR)**
CO2	K4	17b.	Outline the preparation of i) Cinnamaldehyde ii) Mandelic acid
CO3	K4	18a.	Discuss the mechanism of pinacol-pinacolone rearrangement. **(OR)**
CO3	K4	18b.	Define Dakin reaction with suitable example and discuss its mechanism.
CO4	K5	19a.	Elucidate the structure of Nicotine. **(OR)**
CO4	K5	19b.	Elucidate the structure of citral.
CO5	K5	20a.	Explain the illustration how IR spectroscopy is used to identify the functional groups **(OR)**
CO5	K5	20b.	Write notes on: i) Characteristics of absorption frequencies in IR. ii) Nature of double bonds in UV