Reg. No.				

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



UG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2025.

(For those admitted in June 2023 and later)

PROGRAMME AND BRANCH: B.Sc., CHEMISTRY

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE		
III	PART- III	CORE - 3	U23CH303	GENERAL CHEMISTRY- III		

Date & Session: 07.11.2025/AN Time: 3 hours Maximum: 75 Marks

Course Outcome	Bloom's K-level	Q. No.	<u>SECTION – A (10 X 1 = 10 Marks)</u> Answer <u>ALL Questions.</u>
CO1	K1	1.	Which of the following has maximum value of mean free path? a) H ₂ b) CO ₂ c) N ₂ d) O ₂
CO1	K2	2.	The number of vibrational modes for CO2 molecules is a) 1
CO2	K1	3.	Viscosity of liquid with rise in temperature. a) Increases b) Remains constant c) Decreases d) Is independent
CO2	K2	4.	Which of the following unit cells has constituent particles occupying the corner positions only? a) Body-cantered cell b) Primitive cell c) Face cantered cell d) End-centered cell
CO3	K1	5.	Identify the isotopes used to treat thyroid cancer and hyperthyroidism? a) Cobalt-60 b) Carbon -14 c) Iodine-131 d) Sodium -23
CO3	K2	6.	Fuel used in nuclear reactor is a) Thorium
CO4	K1	7.	Which of the following is an example of an aromatic halogen compound? a) Chloromethane b) Chlorobenzene c) Bromoethane d) Iodoethane
CO4	K2	8.	Identify the tertiary alcohol? a) CH ₃ OH b) (CH ₃) ₃ COH c) (CH ₃) ₂ CHOH d) CH ₃ CH ₂ OH
CO5	K1	9.	On heating aqueous solution of benzene diazonium chloride, which of the following is formed? a) benzene b) chlorobenzene c) phenol d) aniline
CO5	K2	10.	Which of the following functional groups is characteristic of thiols? a) -OH b) -COOH c) -NH ₂ d) -SH

Course	Bloom's K-level	Q. No.	$\frac{\text{SECTION} - B \text{ (5 X 5 = 25 Marks)}}{\text{Answer } \frac{\text{ALL}}{\text{Questions choosing either (a) or (b)}}$
CO1	КЗ	11a.	Derive an expression for mean free path. (OR)
CO1	КЗ	11b.	Calculate the RMS & Average Velocity of Argon at 473K.
CO2	КЗ	12a.	Explain isotropy & anisotropy. (OR)
CO2	КЗ	12b.	Discuss the crystal structure of ZnS.
CO3	K4	13a.	Explain the Fajan–Soddy group displacement law. (OR)
CO3	K4	13b.	Difference between nuclear fission and nuclear fusion?
CO4	K4	14a.	Classify the halogen derivatives. (OR)
CO4	K4	14b.	Illustrate the preparation and uses of benzyl chloride.
CO5	K5	15a.	Discuss the mechanism of Claisen rearrangement. (OR)
CO5	K5	15b.	Explain why aldehydes without α-hydrogen undergo Cannizzaro reaction.

Course Outcome	Bloom's K-level	Q. No.	$\frac{\text{SECTION} - C \text{ (5 X 8 = 40 Marks)}}{\text{Answer } \underline{\text{ALL}} \text{ Questions choosing either (a) or (b)}}$
CO1	КЗ	16a.	List the postulates of kinetic theory of gases. (OR)
CO1	КЗ	16b.	Derive an expression for the Boyle temperature of a vander Waals gas.
CO2	K4	17a.	Classify the crystal system. (OR)
CO2	K4	17b.	Analyse the defects in solids.
CO3	K4	18a.	Explain the following term with suitable examples. i) Isotopes ii) Isobars iii) Isotones iv) Isomers (OR)
CO3	K4	18b.	Determine the age of rock using carbon dating method.
CO4	K5	19a.	Compare S_N^{-1} & S_N^{-2} reactions. (OR)
CO4	K5	19b.	How will you distinguish between primary, secondary & tertiary alcohols?
CO5	K5	20a.	Illustrate the preparation, properties and uses of Picric acid. (OR)
CO5	K5	20b.	Discuss the acidic character of phenols.