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	U21CH508	INORGANIC CHEMISTRY - IV

Date & Session: 29.04.2025/AN **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.	Find the Lewis base from the following. a) $AlCl_3$ b) Pyridine c) Ca^{2+} d) BF_3
CO1	K2	2.	The conjugate acid of NH_2^- is _____. a) NH_3 b) NH_2OH c) NH_4^+ d) N_2H_4
CO2	K1	3.	The correct order of acidity of halogen is _____. a) HI > HBr > HCl >HF b) HI > HBr = HCl >HF c) HI < HBr < HCl <HF d) HI < HBr = HCl <HF
CO2	K2	4.	The bronze colour of alkali metals with liq. Ammonia is due to _____. a) paramagnetism b) diamagnetism c) ferromagnetism d) both a and c
CO3	K1	5.	Oxidation number of Chromium in potassium chromate is _____. a) II b) III c) VI d) 0
CO3	K2	6.	Find the equivalent mass of KMnO4 in acidic medium. a) 170.48 b) 31.6 c) 168 d) 158
CO4	K1	7.	The role of ceruloplasmin is. a) facilitating electron transport b) facilitating iron transport c) facilitating oxygen transport d) facilitating copper transport
CO4	K2	8.	The Hill constant vale of hemoglobin is _____. a) 0 b) 1 c) 2.8 d) 4
CO5	K1	9.	The more toxic oxidation state of chromium is _____. a) I b) III c) IV d) VI
CO5	K2	10.	Find the oxidation state of platinum in cis platin a) 0 b) I c) II d) IV
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.	Describe Modern acid and base concepts. **(OR)**
CO1	K3	11b.	Write a short note Lowry-Bronsted acid-base theory.
CO2	K3	12a.	Write the classification of solvents. **(OR)**
CO2	K3	12b.	Discuss the solubility of Inorganic and organic compounds in Liq.SO_2.

CO3	K4	13a.	Differentiate Oxidation Number and Valency. **(OR)**
CO3	K4	13b.	Balance the following equation by oxidation number method. $K_2Cr_2O_7 + H_2SO_4 + FeSO_4$ ------- $K_2SO_4 + Cr_2(SO_4)_3 + Fe_2(SO_4)_3$
CO4	K4	14a.	Describe the structure and function of Hemoglobin. **(OR)**
CO4	K4	14b.	Sketch and explain the biological role of Vit-B12.
CO5	K5	15a.	Illustrate the importance of Gadolinium as MRI contrasting agent. **(OR)**
CO5	K5	15b.	Evaluate the toxicity of Cd and Hg.

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.	Explain in detail Lewis acid and bases. Justify their utility and limitations. **(OR)**
CO1	K3	16b.	How Solvent system explains about acid and bases? Give some examples.
CO2	K4	17a.	Explain with examples the following reactions occurring in Liq.NH3 i) Precipitation reaction ii) complex formation iii) solvation and iv) Ammonolysis **(OR)**
CO2	K4	17b.	Write any four chemical reactions using Liq. HF.
CO3	K4	18a.	Balance the below equation using ion-electron method. $Cr_2O_7^{2-} + Fe^{2+} + H^+$ ------- $Cr^{3+} + Fe^{3+} + H_2O$ **(OR)**
CO3	K4	18b.	Write short note about direct and indirect redox reactions.
CO4	K5	19a.	Describe the mechanism of action of sodium-potassium pump. **(OR)**
CO4	K5	19b.	Critique the role of Zinc enzymes in detail.
CO5	K5	20a.	Appraise the role of Gold in the treatment of Rheumatoid Arthritis. **(OR)**
CO5	K5	20b.	Justify how platinum drugs plays a vital role as anticancer drug?