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
V	PART- III	CORE	U21CH508	INORGANIC CHEMISTRY - IV

Date & Session: 05.11.2024/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 is not a Lewis base? a) pyridine b) ammonia c) pyrrole d) boron trifluoride
CO1	K2	2.	Show the correct increasing order of relative acid strength. a) $HClO_2 < HClO_3 < HClO_4$ b) $HClO_2 < HClO_4 < HClO_3$ c) $HClO_2 = HClO_3 < HClO_4$ d) $HClO_4 < HClO_3 < HClO_2$
CO2	K1	3.	When excess of alkali metal ions in Liq.NH_3 gives ------- colour? a) red b) blue c) bronze d) green
CO2	K2	4.	Select the correct dielectric constant of Liq.SO_2. a) 78.5 (25°C) b) 17.3 (-16°C) c) 83.6 (0°C) d) 22 (-33°C)
CO3	K1	5.	Identify the valency of N in NH_3 is. a) 0 b) 2 c) 3 d) 5
CO3	K2	6.	Site the oxidation number of Fe in Fe_3O_4 . a) 3 b) 4 c) 2 d) 8/3
CO4	K1	7.	Which of the following enzyme is an antipernicious anaemic factor? a) Carboxy peptidase b) carbonic anhydrase c) SOD d) Vit-B_{12}
CO4	K2	8.	Trace out the metal ion present in carbonic anhydrase. a) Cu b) Zn c) Fe d) Co
CO5	K1	9.	Which of the following element is the best MRI contrasting agent? a) Ag b) Au c) Gd d) Na
CO5	K2	10.	Insulin and ------ maintain correct level of glucose in the blood. a) Cr (III) b) Au (III) c) Fe(III) d) Cr (VI)

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 short note on Arrhenius concept of acid and bases with examples.
			(OR)
CO1	K3	11b.	Identify Lewis acids and bases from the following. $AlCl_3$, NH_3, BBr_3, $CH_3\text{-}O\text{-}CH_3$, PCl_5, CO_2, Ag^+, Fe^{2+}, SO_2 and C_5H_5N.
CO2	K3	12a.	Construct the Chart of types of solvents with suitable examples.
			(OR)
CO2	K3	12b.	Compute the acid- base reactions involved in Liq. NH_3, and Liq.HF.
CO3	K4	13a.	Differentiate between Oxidation Number and Valency.
			(OR)
CO3	K4	13b.	Illustrate oxidation and Oxidant.
CO4	K4	14a.	Discuss the Oxygen binding curve for haemoglobin and myoglobin.
			(OR)
CO4	K4	14b.	Examine the role of carboxypeptidase in bio system.
CO5	K5	15a.	Discus the role of gold in the treatment arthritis.
			(OR)
CO5	K5	15b.	Describe the toxicity of Cd and Pb.

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.	i) Explain Lux-Flood theory of acids and bases. ii) HI is stronger acid than HF- Explain.
			(OR)
CO1	K3	16b.	Apply Levelling effect to discuss acid base strength of Bronsted acids and bases.
CO2	K4	17a.	Compare the ammonation and ammonolysis reactions of Liq.NH_3.
			(OR)
CO2	K4	17b.	Illustrate the chemical reactions involved in Liq.SO_2.
CO3	K4	18a.	Balance the following equation ion-electron method. $Cr_2O_7^{2-} + Fe^{2+} + H^+ \text{-------- } Cr^{3+} + Fe^{3+} + H_2O$
			(OR)
CO3	K4	18b.	Examine the feasibility of following disproportionation reaction. i) MnO_4^{2-} into MnO_4^- and Mn^{2+}. ii) Mn^{2+} into Mn^0 and Mn^{3+} whose electrode potential as -1.18V and -1.15V respectively.
CO4	K5	19a.	Comment the role of sodium -potassium pump in ion transport mechanism.
			(OR)
CO4	K5	19b.	Write down the functions of Ceruloplasmin in detail.
CO5	K5	20a.	Cis-platin is a key anticancer drug- Justify.
			(OR)
CO5	K5	20b.	Predict the features and role of lanthanides as MRI contrasting agents.