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
II	PART - III	CORE	U21CH203	INORGANIC CHEMISTRY-II

Date & Session: 15.11.2024 / 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.	The geometry of XeF_4 is _____. a) octahedral b) square planar c) tetrahedral d) pentagonal bipyramid
CO1	K2	2.	Kr 85 is a/an _____. a) source of beta radiation b) source of gamma radiation c) water softener d) source of alpha radiation
CO2	K1	3.	Zinc group elements are having similar properties of _____. a) alkali metals b) alkaline earth metals c) halogens d) noble gases
CO2	K2	4.	An oxidation state of Mn in KMnO4 is _____. a) II b) III c) VI d) VII
CO3	K1	5.	The stable oxidation state of lanthanides is _____. a a) II b) III c) VI d) VII
CO3	K2	6.	The spin only magnetic moment of Gd^{3+} ion is. a) 1.732 B.M. b) 2 B.M. c) 7.9 B.M. d) 0
CO4	K1	7.	The chief ore of thorium is _____. a) pitch blende b) spodumene c) magnetite d) monazite sand
CO4	K2	8.	Which is not a concentration process of the ore? a) Hand picking b) Froth floatation c) gravity separation d) smelting
CO5	K1	9.	Phenolphthalein is a _____ . a) weak acid b) weak base c) metal ion d) neutral compound
CO5	K2	10.	What is the percentage of Ca in $CaCO_3$? a) 10 b) 30 c) 20 d) 40

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.	How will you isolate noble gases from dry air? **(OR)**
CO1	K3	11b.	Illustrate the separation of inert gases by Dewar's Coconut charcoal method.
CO2	K3	12a.	Write a brief note on Wilkinson catalyst and their applications. **(OR)**
CO2	K3	12b.	Indentify the uses of Titanium and Zinc.
CO3	K4	13a.	Outline the ion-exchange method to separate lanthanides. **(OR)**
CO3	K4	13b.	Examine the magnetic properties of lanthanides.
CO4	K4	14a.	Sketch and explain the extraction of lithium from its ore. **(OR)**
CO4	K4	14b.	Compute calcination and roasting in the concentration of ores.
CO5	K5	15a.	Assign any one qualitative tests to identify borate and phosphate. **(OR)**
CO5	K5	15b.	Interpret the complex metric titration in detail.

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.	Write the history and properties of helium. **(OR)**
CO1	K3	16b.	How will you prepare XeF_2, $XeOF_4$, XeF_6 and XeO_3.
CO2	K4	17a.	Distinguish between Prussian and Turnbull's blue. **(OR)**
CO2	K4	17b.	Determine the role of Ziegler-Natta catalyst and sodium nitroprusside.
CO3	K4	18a.	Comment on the uses of ceric ammonium sulphate and thorium nitrate. **(OR)**
CO3	K4	18b.	Compare and contrast the features of lanthanides and actinides.
CO4	K5	19a.	Propose the acid digestion method of extraction of uranium from pitchblende. **(OR)**
CO4	K5	19b.	Sketch and explain the extraction process of metals from its ore.
CO5	K5	20a.	Criticize the requirements of primary standard and explain molarity and normality. **(OR)**
CO5	K5	20b.	Gravimetric Analysis is the superior quantitative analysis- Justify.