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 ELECTIVE	U21CH5E1A	ADVANCED ANALYTICAL CHEMISTRY

Date & Session: 13.11.2024 / 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.	The difference between the indicated value and the true value of the quantity is _____. a) Gross error b) Absolute error c) Relative error d) Dynamic error
CO1	K2	2.	Find the value of variance, whose mean is 22 and standard deviation is 10? a) 45.45% b) 28.50% c) 35.35% d) 55.55%
CO2	K1	3.	The maximum permissible amount of Fluorine in drinking water is _____. a) 5 mg/L b) 10 mg/L c) 1.5 mg/L d) 100 mg/L
CO2	K2	4.	Taste and odour of water are due to the presence of _____. a) dissolved gases b) dead microorganisms c) Iron compounds d) all of these
CO3	K1	5.	Which of the following is not the character of good fuel? a) inexpensive b) safe to handle c) low calorific value d) moderate rate of combustion
CO3	K2	6.	Find the best variety of coal among the following. a) peat b) coke c) lignite d) bituminous
CO4	K1	7.	An electroanalytical technique that involves measurement of electricity in a redox reaction of the analyte is _____. a) Coulometry b) Conductometry c) potentiometry d) Polarography
CO4	K2	8.	The diffusion current in the polarography independent of the following. a) capillary diameter b) temperature c) life time of Hg drop d) Charge of the electrolyte
CO5	K1	9.	DTA can be used for which of the following process? a) Crystallisation b) enzyme analysis c) phase diagram d) mechanical properties of crystals
CO5	K2	10.	Turbidimetry is a measure of. a) light emission b) increase in light intensity c) decrease in light intensity d) fluorescence

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 notes on precision and accuracy
			(OR)
			Calculate the standard deviation whose titre values for 10mL of solution using a micro burette, the volume of titrants are 9.98, 9.99, 9.98, 10.00 and 10.02 mL.
CO1	K3	11b.	
CO2	K3	12a.	How will you estimate TDS and metal ions hardness in water?
			(OR)
CO2	K3	12b.	Identify how BOD and COD are the best methods of chemical characterisation of water.
CO3	K4	13a.	Differentiate between coal and coke.
			(OR)
CO3	K4	13b.	Comment the role of aniline point and octane number.
CO4	K4	14a.	Comment the advantages and disadvantages of DME.
			(OR)
CO4	K4	14b.	Write a survey about coulometric titrations.
CO5	K5	15a.	Justify the factors affecting the TGA curve.
			(OR)
CO5	K5	15b.	Evaluate the applications of turbidimetry.

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.	Determine any four types of determinate errors in detail.
			(OR)
CO1	K3	16b.	Explain the following. i) Mean ii) Median iii) standard deviation iv) variance
CO2	K4	17a.	Illustrate any four physical examination of water.
			(OR)
CO2	K4	17b.	Analyse the bacterial examination of water briefly.
CO3	K4	18a.	Categorize the types of coal in detail.
			(OR)
CO3	K4	18b.	Examine the gaseous fuel and its calorific value elaborately.
CO4	K5	19a.	Explain the Principle and applications of electrogravimetry.
			OR
CO4	K5	19b.	Evaluate the applications and Advantage of amperometry.
CO5	K5	20a.	Discuss the applications of spectrophotometry.
			OR
CO5	K5	20b.	Show the important applications of TGA and DTA.