22CHU102N/22CHU102/18CHU02

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(First Semester)

Branch – **CHEMISTRY**

ANALYTICAL CHEMISTRY

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	In case of strong acid burns after washing with water rinse with a.dilute ammonia b. sodium bicarbonate solution. c. either a or b d. dilute HCl	K1	CO1
	2	In ground glass joints, inner joints and outer joints have the ground glass surface facing_____ and ____ respectively a.outward, inward b. inward, inward c. outward, outward d. inward, outward	K2	CO1
2	3	Due to common ion effect weak electrolyte becomes------ a. more weak b. more strong c. remains as it is d. either weak or strong	K1	CO2
	4	Dimethyl glyoxime is a specific reagent for---------- a. Ni^{2+} b. Co^{2+} c. Cu^{2+} d. Fe^{3+}	K2	CO2
3	5	Choose the indicator used in redox titration a. methyl orange b. phenolphthalein c. starch d. EBT	K1	CO3
	6	Acetic acid is a a.strong acid b. weak acid c. strong base d. weak base	K2	CO3
4	7	Name the process that contaminates the precipitates and also carries the precipitate solution containing soluble impurities. a. Coprecipitation b. Supersaturation c. Reprecipitation d. None of the above	K1	CO4
	8	Which analytical method is based on the weight of the precipitate? a. Acid base Titration b. Complexometric Titration c. Precipitation titration d. Gravimetry	K2	CO4
5	9	Principle behind paper chromatography is a.adsorption b. partition c. absorption d. none of these	K1	CO5
	10	In steam distillation, the liquid boils when the sum of vapour pressure due to organic liquid and due to water becomes? a.Greater than atmospheric pressure b.Lesser than atmospheric pressure c.Equals to atmospheric pressure d.None of the mentioned	K2	CO5

SECTION - B (35 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	What are the methods to dispose laboratory wastes? Discuss in detail.	K2	CO1
		(OR)		
	11.b.	Write a note on calibration and grading of glasswares.		

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2	12.a.	Discuss the techniques used in filtering and washing of precipitates in semi micro qualitative analysis.	K3	CO2
		(OR)		
	12.b.	State Common ion effect. Explain its application in the separation of cations.		
3	13.a.	Discuss the theory of acid base indicators.	K3	CO3
		(OR)		
	13.b.	Explain how Fe (II) is estimated using potassium dichromate solution?		
4	14.a.	Discuss the advantages and disadvantages of using organic precipitants.	K4	CO4
		(OR)		
	14.b.	Write a note on i. selective and specific precipitants (3.5 Marks) ii. sequestering agents (3.5 Marks)		
5	15.a.	Illustrate sublimation and recrystallization methods	K4	CO5
		(OR)		
	15.b.	What is a desiccant? Discuss the suitability of different desiccants for different conditions		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Write a detailed note on handling and storage of i. ethers ii. carcinogenic chemicals iii. Poisonous chemicals (3+3+4 Marks)	K4	CO1
2	17	Describe the spot test analysis for Ni, Mg, Al and ammonium ions	K4	CO2
3	18	Explain i. complexometric titration (5 Marks) ii. precipitation titration (5 Marks)	K4	CO3
4	19	Discuss the estimation of nickel using gravimetric method	K4	CO4
5	20	Explain the principle behind thin layer chromatography. Write about its applications	K4	CO5

Z-Z-Z END