

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 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)

Question No.	Question	K Level	CO
1	The correct procedure for combining acid and water is a) Add acid to large amount of water b) Mix water and acid in a container simultaneously c) Always add acid to water, cool & swirl d) Always add water to acid, cool & swirl.	K1	CO1
2	The desire to maintain a safe laboratory environment for all begins with _____ a) Prevention b) microbiology c) ubiquity d) accidents	K1	CO1
3	----- technique is used to minimize errors in semi-micro methods. a) Replication b) Calibration c) Standardization d) Validation.	K2	CO2
4	Which of the following methods is commonly used to remove interfering ions? a) Precipitation b) Distillation c) Extraction d) All of the above.	K2	CO2
5	Indicator that is commonly used in redox reaction is _____ a) Potassium thio sulphate b) Sodium thio sulphate c) Starch d) Methyl orange	K1	CO3
6	What is the advantage of using complexometric titration over other titration method? a) Higher accuracy b) Faster result c) Simpler procedure d) Ability to titrate multiple ion simultaneously.	K1	CO3
7	What is the principle of gravimetric analysis? a) Measurement of volume b) measurement of mass c) Measurement of concentration d) Measurement of density.	K3	CO4
8	Which substance is commonly used as an occluding agent? a) Cellulose b) Starch c) Silica d) Magnesium stearate	K3	CO4
9	What is the primary function of a desiccant? a) To absorb moisture b) to release moisture c) to neutralize chemicals d) to filter particulates.	K2	CO5
10	The solvent used for separation in chromatography is known as _____ a) Eluent b) solution c) titrant d) mobile phase	K2	CO5

Cont...

SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks

(5 × 7 = 35)

Question No.	Question	K Level	CO
11.a.	Write note on:(i) Waste disposal (ii) First aid techniques.	K2	CO1
	(OR)		
11.b.	What are the precautions to be observed in the use of standard joint apparatus?		
12.a.	Explain about common ion effect and solubility product.	K3	CO2
	(OR)		
12.b.	Describe the preparation of solution for cation testing on semi micro scale.		
13.a.	What are primary and secondary standards? Write their characteristics and mention some examples.	K4	CO3
	(OR)		
13.b.	How are Ag ⁺ ions estimated by precipitation reaction?		
14.a.	Mention the advantages and disadvantages of using organic precipitants.	K5	CO4
	(OR)		
14.b.	Describe the process of washing and drying a precipitate in gravimetric analysis.		
15.a.	What are different techniques of drying? How are solids dried?	K6	CO5
	(OR)		
15.b.	Explain the theory of distillation.		

SECTION - C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks

(3 × 10 = 30)

Question No.	Question	K Level	CO
16	Outline about laboratory safety measures.	K4	CO1
17	Describe spot test analysis for Ni ²⁺ , Mg ²⁺ and Cu ²⁺	K4	CO2
18	Explain the theory of acid-base indicators.	K5	CO3
19	How is Nickel estimated gravimetrically?	K5	CO4
20	Discuss the principle and application of ion- exchange chromatography.	K6	CO5