

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2026
(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	Identify the poisonous compound for which Vomiting need not be induced. A) Lead compounds B) barium compounds C) Zinc compounds D) acids	K1	CO1
	2	Select the compound for which the threshold vapour concentration is very high A) Mercury vapours B) Carbon monoxide C) Carbon dioxide D) Acetone vapours	K2	CO1
2	3	Second group cations are precipitated as A) Sulphides in acidic medium B) Sulphides in alkaline medium C) Chlorides in acidic medium D) Chlorides in alkaline medium	K1	CO2
	4	What is the colour of Ni - DMG complex? A) Yellow B) Green C) Rosy red D) blue	K2	CO2
3	5	Select the primary standard A) acetic acid B) oxalic acid C) Sodium hydroxide D) potassium permanganate	K1	CO3
	6	Which one of the following indicators is used in EDTA titrations? A) Phenolphthalein B) Methyl orange C) Erio chrom black T D) starch	K2	CO3
4	7	Which one of the following phenomena leads to impure precipitate formation during gravimetric analysis? A) Digestion B) Washing with volatile solvent C) Occlusion D) Slow precipitation at high temperature	K1	CO4
	8	Outline the Co-precipitation can be minimized by A) Rapid precipitation at low temperature B) Slow precipitation at high temperature C) Washing precipitate with concentrated solution D) Precipitating in presence of impurities	K2	CO4
5	9	The stationary phase in ion-exchange chromatography is generally: A) Silica gel B) Alumina C) Cross-linked polystyrene resin D) Paper	K1	CO5
	10	MOST suitable for separating a heat-sensitive liquid with very high boiling point (> 300 °C)? A) Fractional distillation B) Vacuum distillation C) Steam distillation D) Azeotropic distillation	K2	CO5

Cont....

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.	Explain the methods of storage and handling of chemicals.	K4	CO1
		(OR)		
	11.b.	Explain general precautions for avoiding accidents in laboratory.		
2	12.a.	Explain the role of common ion effect in semimicro qualitative analysis.	K4	CO2
		(OR)		
	12.b.	Write the spot test reactions for Al^{3+} and Cu^{2+} .		
3	13.a.	Explain complexometric titration with suitable example.	K5	CO3
		(OR)		
	13.b.	What are the different ways of expressing concentrations. Explain.		
4	14.a.	Give an account on organic precipitants.	K5	CO4
		(OR)		
	14.b.	Deduct the different types of crucibles used in gravimetric analysis.		
5	15.a.	Propose the difference between recrystallization and sublimation with examples.	K6	CO5
		(OR)		
	15.b.	Discuss in detail the principles and applications of Thin layer chromatography(TLC).		

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	(i) Give an account on general laboratory safety measures. (ii) Write short note on cleaning agents.	K4	CO1
2	17	Explain the different reactions involved in semi-micro analysis.	K4	CO2
3	18	What is the principle involved in acid- base titration? Explain different types of acid base titrations.	K5	CO3
4	19	Discuss the procedure for the gravimetric estimation of nickel and lead.	K5	CO4
5	20	Discuss the theory and applications of different distillation techniques.	K6	CO5

Z-Z-Z END