22BCU310N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2025
(Third Semester)

Branch - **BIOCHEMISTRY**

BIOCHEMICAL TECHNIQUES

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	How will you name the number of moles equivalent per liter of solution? a) Molarity b) Molality c) Normality d) Percentage	K2	CO1
	2	The amount of a chemical per 100 ml of a solution is called as_____. a) Molarity b) Molality c) Normality d) Percentage	K2	CO1
2	3	The sample quantification was performed by using _____ light absorption. a) Visible b) UV c) X rays d) UV Vis	K2	CO2
	4	The technique that provides compound identification a) Spectrometer b) calorimetry c) Xray d) GCMS	K2	CO2
3	5	Name the chromatography technique used to separate the biomolecules based on the ionic strength. a) Paper b) GCMS c) TLC d) Ion exchange	K2	CO3
	6	Name the separation techniques that applies biomolecular interaction for separation. a) Binding b) Immobilized c) Ionic exchange d) Affinity	K2	CO3
4	7	Which measures the speed of rotor with its centrifugal force? a) G-force b) Size c) RPM d) RCF	K2	CO4
	8	Identify the parameter for the separation of cell organelles. a) Size b) Shape c) density d) All	K2	CO4
5	9	Select the detector used to measure the ionizing radiation. a) MG detector b) Electronic voltage counter c) Gas filled counter d) GM Counter	K2	CO5
	10	Specify the molecules used to find the diseases a)Tracers b) Light c) Racers d) Hazards	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 preparation of a stock solution and mention its need?	K2	CO1
		(OR)		
	11.b.	How pH meter is used in determining pH of a solution.		
2	12.a.	Describe the working steps of a single cell photoelectric colorimeter.	K2	CO2
		(OR)		
	12.b.	List the principle and applications of flame photometer.		
3	13.a.	Determine the significance of compounds separation using column chromatography.	K2	CO3
		(OR)		
	13.b.	Narrate the steps involved in paper chromatography technique with neat diagram.		
4	14.a.	DNA can be separated using Agarose gel electrophoresis. Give reason and explain the steps to perform this technique.	K2	CO4
		(OR)		
	14.b.	Discuss the basic principle behind centrifugation technique? List types of centrifuges and rotors used.		
5	15.a.	Summarize the functioning of scintillation counter for measuring radioactivity?	K2	CO5
		(OR)		
	15.b.	Compile the applications of radioactive substances in medicine.		

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	Describe any two electrodes used to find the pH of a solution.	K2	CO1
2	17	Analyze the importance of FTIR in structural elucidation.	K2	CO2
3	18	Explain compound detection using HPLC and give its highlights.	K2	CO3
4	19	Neatly represent the instrumentation steps to proceed analytical centrifugation.	K2	CO4
5	20	Elaborate the procedures to follow while using radiations to avoid biological hazards.	K2	CO5

Z-Z-Z END