

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
MSc DEGREE EXAMINATION DECEMBER 2023
(First Semester)

Branch - **BIOCHEMISTRY**

ANALYTICAL BIOCHEMISTRY

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	Find out the best method to characterize proteins. a) Mass spectrometry c) Electrophoresis b) Chromatography d) PANTHER	K1	CO1
	2	Choose the character of amino acid which is separated by isoelectric focusing technique. a) Ampholyte c) Zwitter ion b) Isoelectric pH d) All	K2	CO1
2	3	What type of technique implies on "Concentration of solute is proportional to absorbance"? a) Spectrometry c) Fluorimetry b) Colorimetry d) Flame photometry	K1	CO2
	4	The rate zonal centrifugation method to separate particles based on its sedimentation. a) Analytical c) density gradient b) Differential d) Ultra	K2	CO2
3	5	The principle used for biomolecule separation between two different phases. a) Partition c) Coupling b) Joining d) Mixing	K1	CO3
	6	Show the technique used to find changes in tertiary structure of proteins. a) CD c) ORD b) RAPD d) PCR	K2	CO3
4	7	Omit the restriction enzyme that specifically cuts the DNA strand. a) Type II c) Type I b) Type IIs d) Type III	K1	CO4
	8	After completing 10 cycles of PCR, how many DNA strands are produced? a) 512 c) 256 b) 128 d) 1024	K2	CO4
5	9	In sickle cell anemia condition the amino acid that replaces glutamate in beta chain is a) Valine c) Leucine b) Aspartate d) Lysine	K1	CO5
	10	Select the assay used to detect the DNA damage. a) Ames c) Comet b) HLA typing d) DNA foot printing	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.	Demonstrate on extraction of nucleic acids.	K2	CO1
	(OR)			
	11.b.	State the procedure to extract Flavonoids.		
2	12.a.	Make use of Spectrophotometric method to analyze DNA.	K3	CO2
	(OR)			
	12.b.	With a neat diagram identify the cell organelles by differential centrifugation.		
3	13.a.	Experiment with a protein sample by using Ion exchange chromatography.	K3	CO3
	(OR)			
	13.b.	Choose the NMR technique and report on sample purity.		
4	14.a.	Analyze the unknown sequence of DNA by mapping with restriction enzymes.	K4	CO4
	(OR)			
	14.b.	Inspect the importance of using RT –PCR in detecting nucleic acid qualitatively.		
5	15.a.	Determine the use of nucleic acid probes in hemophilia.	K5	CO5
	(OR)			
	15.b.	Select and explain about the mutagenicity testing for chemical mutagens.		

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	Categorize complex proteins mixtures using 2D electrophoresis.	K4	CO1
2	17	Evaluate the importance of autoradiography in analyzing tissue samples.	K5	CO2
3	18	Elaborate on steps to perform flow cytometry for cancer cells.	K6	CO3
4	19	Determine the role of RFLP in disease diagnosis.	K5	CO4
5	20	Predict the DNA protein interaction by DNA foot printing.	K6	CO5

Z-Z-Z

END