

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2024
(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	Choose the solvent used for partitions of nucleic acids from other cellular components. a) Phenol- Chloroform b) Acetone- chloroform c) Acetone- Ethanol d) Phenol-Ethanol	K1	CO1
	2	_____ is an electro osmotic flow method used for separation of biomolecules. a) Centrifugation b) Osmosis c) Density gradient d) Capillary electroporesis	K2	CO1
2	3	Which method uses fluorescent derivative to determine the presence of chemical groups? a) centrifugation b) Spectrophotometry c) Spectrofluorimetry d) Colorimetry	K1	CO2
	4	The commonly used rotors in laboratory centrifuges is a) Fixed angle b) Swinging bucket c) Angle head d) All	K2	CO2
3	5	Name the molecule that binds reversibly to specific group of molecules in ion exchange chromatography. a) Ligand b) Transition ions c) Analyte d) Chloro ions	K1	CO3
	6	The cell cycle assessment can be performed using a) Flow cytometry b) HPTLC c) Affinity column d) HPLC	K2	CO3
4	7	Choose the enzyme used for labelling phosphate group at gamma position in ATP at 5' end. a) Polynucleotide kinase b) Terminal transferase c) Phosphatase d) deoxynucleotidase	K1	CO4
	8	Antigens and antibodies are blot transferred by the a) Southern b) Eastern c) Northern d) Western	K2	CO4
5	9	Find the deficiency factor that causes Haemophilia A. a) Factor VIII b) Factor VII c) Factor VI d) Factor IX	K1	CO5
	10	Select the Chromosome responsible for HLA system. a) 1 b) 5 c) 6 d) 2	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.	Outline the methods for extraction of proteins from homoesenate.	K2	CO1
		(OR)		
	11.b.	Step out the procedure to extract Phenolic compounds.		
2	12.a.	Apply the principle of bioluminescence in detection of biomolecules.	K3	CO2
		(OR)		
	12.b.	Explain the principle and applications of NMR.		
3	13.a.	Make use of Gas chromatography technique for the separation of mixtures.	K3	CO3
		(OR)		
	13.b.	Discuss the principle and application of X-Ray diffraction.		
4	14.a.	Examine the methods for Labeling of Nucleic acid probes.	K4	CO4
		(OR)		
	14.b.	Explain the principle and instrumentation of Photoelectron spectrometry.		
5	15.a.	"DNA mutation in Haemoglobin" Justify the inherited disorder.	K5	CO5
		(OR)		
	15.b.	Highlight the importance of DNA fragmentation assay.		

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	Analyze and report on separation of large DNA molecules by Pulse field gel electrophoresis.	K4	CO1
2	17	Comparatively explain about the sucrose gradient and Cscl centrifugation.	K5	CO2
3	18	Develop a method for detection of protein and aminoacids using CD and ORD.	K6	CO3
4	19	Differentiate between PCR and KASPar assay.	K5	CO4
5	20	Design the nucleic acid probes in detecting Lymphoid malignancy.	K6	CO5

Z-Z-Z

END