

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

Branch - APPLIED MICROBIOLOGY
BIORESEARCH INSTRUMENTATION & AI

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	Which of the following are low power lenses? a) 4X b) 40X c) 100X d) 45x	K1	CO1
	2	A microscope is set to 10x eyepiece and 40x objective. What is the total magnification? a) 140x b) 410x c) 400x d) 100x	K2	CO1
2	3	How centrifuge is working under principle of a) Weight of the molecule b) Size of the molecule c) Size and shape of the particle d) Based on the medium	K1	CO2
	4	What is rate-zonal centrifugation? a) Based on separation of particles by mass b) Based on separation of particles by density c) Based on separation of particles on solubility d) Based on separation of particles on size	K2	CO2
3	5	Which technique separates charged particles using electric field? a) Hydrolysis b) Electrophoresis c) C Protein synthesis d) D Protein denaturing	K1	CO1
	6	What Chromatography with solid stationary phase is called? a) circle chromatography b) Square chromatography c) solid chromatography d) adsorption chromatography	K2	CO2
4	7	What is LCR? a) Ligand chain reaction b) Ligase chain reaction c) Lyse chain reaction d) Lymph chain reaction	K1	CO4
	8	Which type of bacteria is associated with VRSA? a) German measles b) Blood-borne pathogen c) <i>Staphylococcus aureus</i> d) Heart disease	K2	CO4
5	9	Who is the inventor of Artificial Intelligence? a) Geoffrey Hinton b) Andrew Ng c) John McCarthy d) Jürgen Schmidhuber	K1	CO5
	10	Which of the following is the branch of Artificial Intelligence? a) Machine Learning b) Cyber forensics c) Full-Stack Developer d) Network Design	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 a compound microscope.	K2	CO2
	(OR)			
	11.b.	Interpret the parts of a microscope.		
2	12.a.	Explain absorption spectroscopy and derive Beer's law.	K2	CO2
	(OR)			
	12.b.	Explain the single beam and double beam spectrophotometers.		
3	13.a.	Explain the operation of any two detector used in gas chromatography.	K2	CO4
	(OR)			
	13.b.	Illustrate with a block diagram, the operation of a HPLC.		
4	14.a.	Explain the LAPS for food borne disease detection.	K2	CO3
	(OR)			
	14.b.	Explain About the FISH.		
5	15.a.	Explain the domains of Artificial Intelligence.	K2	CO4
	(OR)			
	15.b.	Illustrate the Artificial Intelligence environment.		

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	Explain about the GM counter and its applications.	K5	CO2
2	17	Classify the differential centrifugation techniques.	K4	CO2
3	18	Explain about the SDS-PAGE and its applications.	K5	CO2
4	19	Evaluate the molecular diagnosis of STD.	K5	CO3
5	20	Elaborate the prediction of microbial species is artificial intelligence.	K6	CO5

Z-Z-Z

END