22BTP103N/ 22BTP103

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2023
(First Semester)

Branch - **BIOTECHNOLOGY**

APPLIED MICROBIOLOGY

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Q.No.	Question	K Level	CO
1	1	Father of microbiology is a. Alexander flemming b.Edward jenner c. Robert Koch d. Antoni van Leewen hoek	K1	CO1
	2	The portion of the growth curve where rapid growth of bacteria is observed is known as _____ a. Lag phase b. Logarithmic phase c. Stationary phase d. Decline phase	K2	CO1
2	3	Which of the following gene deduced the evolutionary relationship between the taxonomic groups? a. 16S rRNA b. 23S rRNA c. 18S rRNA d. 5S rRNA	K1	CO2
	4	% Similarity (%S) of each strain to every other strain is calculated by which method? a. Intuitive Method b. Numerical Taxonomy c. Genetic Relatedness d. DNA homology experiments	K2	CO2
3	5	Which of the following is not an appropriate target for antifungal drugs? a. chitin b. β(1→3) glucan c. ergosterol d. qiuinolones	K1	CO3
	6	Relate which of the following antimicrobial drugs is synthetic? a. sulfanilamide b. penicillin c. neomycin d. actinomycin	K2	CO3
4	7	Which is one of the following nutrrient cycle is directly propelled by sunlight? a. Carbon b. Phosphorus c. Nitrogen d. Sulfur	K1	CO4
	8	The process of mineralization by microorganisms helps in the release of _____. a. Inorganic nutrients from humus b. Phosphorus c. Organic nutrients d. Nitrogen	K2	CO4
5	9	Which one of the following acid-fast rod bacilli can take up to ten years for its growth in host cells and causes skin infections? a. *Mycobacterium tuberculosis* b. *Mycobacterium leprae* c. *Mycobacterium avium* d. *Nocardia sps*	K1	CO5
	10	Which of the following country was the first to authorize the Pfizer-BioNTech COVID-19 vaccine in 2020? a. USA b. Germany c. UK d. Australia	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.	Categorise the bacteria based on morphology.	K3	CO1
		(OR)		
	11.b.	Compare diauxic growth and synchronous growth in bacteria.		
2	12.a.	Select the traditional methods of bacterial identification.	K3	CO2
		(OR)		
	12.b.	Interpret the concept of metagenomics.		
3	13.a.	Examine the ideal characteristic features of antibacterial agents.	K4	CO3
		(OR)		
	13.b.	List out the important anti-fungal agents with the mode of action.		
4	14.a.	With a neat schematic representation, explain the nitrogen cycle.	K4	CO4
		(OR)		
	14.b.	Comment on ammonification.		
5	15.a.	Explain the pathogenesis of COVID disease. Can vaccinated people still get COVID – 19?	K5	CO5
		(OR)		
	15.b.	Explain the salient features of *Mycbacterium tuberculosis.*		

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	Categorise the various phases of bacterial growth. Add note on continuous culture.	K4	CO1
2	17	Categorise the bacteria based on bergey's manual.	K4	CO2
3	18	Give detailed note on anti-viral agents and their functional importance.	K4	CO3
4	19	Compile the important viral pathogenic strains and Add a note on viral disease in humans.	K5	CO4
5	20	Elaborate the causative agents and transmission of malarial disease. Add a note on current strategy to control this disease in our country.	K5	CO5

Z-Z-Z END