

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2024
(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.	Question No.	Question	K Level	CO
1	1	Which of the following is not the contribution of Louis Pasteur? a) Developed a series of experiments to support the germ theory of disease b) Developed the first vaccine against tuberculosis and polio c) Developed a sterilization process called the pasteurization process d) Demonstrated the fermentation process	K1	CO1
	2	If a culture starts with 50 cells, how many cells will be present after five generations with no cell death? a) 200 b) 400 c) 1600 d) 3200	K2	CO1
2	3	Which of the following bacterial species is classified as high G+C gram-positive? a) Corynebacterium diphtheria b) Staphylococcus aureus c) Bacillus anthracis d) Streptococcus pneumonia	K1	CO2
	4	Which of the following is true of a cladogram? a) It is subjective and reflects the bias of the investigator who created it. b) It tells us the exact time at which derived characters evolved. c) It shows the sequence in which characters evolved in the group being studied. d) none of the above	K2	CO2
3	5	Which of the following antimicrobials inhibits the activity of DNA gyrase? a) Polymyxin B b) Clindamycin c) Nalidixic acid d) Rifampin	K1	CO3
	6	Which of the following is not an appropriate target for antifungal drugs? a) Ergosterol b) Chitin c) Cholesterol d) $\beta(1 \rightarrow 3)$ glucan	K2	CO3
4	7	The conversion of organic N to the more mobile, inorganic state is known as _____. a) Ammonification b) Nitrification c) Denitrification d) Nitrogen mineralization	K1	CO4
	8	Which of the given is an example of a disease caused by a virus? a) Cankers b) Fire Bligh c) Spotted Wilt d) Leaf spot	K2	CO4
5	9	Which of the following is the carrier of Plague bacteria? a) Anopheles mosquito b) Aedes aegypti c) Xenopsylla d) Rhinovirus	K1	CO5
	10	Which of the following pathogen is not responsible for causing Filariasis? a) Wuchereria bancrofti b) Brugia malayi c) Schistosoma haematobium d) Brugia timori	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.	Examine the contribution of Van Leeuwenhoek, Spallanzani, Pasteur, Cohn and Koch to the field of microbiology.	K3	CO1
		(OR)		
	11.b.	Illustrate the mathematical expression of microbial growth curve.		
2	12.a.	Explore the role of 16rRNA in bacterial identification.	K3	CO2
		(OR)		
	12.b.	Tabulate the difference between Archaeobacteria and Eubacteria.		
3	13.a.	Outline the steps where inhibitors of RNA polymerase can exert their function with suitable example.	K4	CO3
		(OR)		
	13.b.	Analyze the steps involved in the mechanism of action of the antifungal drug - Griseofulvin.		
4	14.a.	Explore the steps involved in the Sulphur cycle.	K4	CO4
		(OR)		
	14.b.	Explain the factors affecting microbial transformation in brief.		
5	15.a.	Describe the life cycle of filarial worm.	K5	CO5
		(OR)		
	15.b.	Summarize the Infection caused by Candida.		

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 in detail the principle, process and application of continuous culture.	K4	CO1
2	17	Examine the classification of bacteria according to bergey's manual.	K4	CO2
3	18	Illustrate the mechanism of action of antiviral agents with suitable examples in detail.	K4	CO3
4	19	Evaluate the microbial transformation of nitrogen in detail.	K5	CO4
5	20	Assess the epidemiology, pathogenesis prevention and treatment of the disease rabies.	K5	CO5

Z-Z-Z

END