

PSG COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2025
(Second Semester)

Branch - BIOTECHNOLOGY

FUNDAMENTALS OF MICROBIOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry **EQUAL** marks

$$(10 \times 1 = 10)$$

ALL questions carry EQUAL marks (1x10=10)						
Module No.	Question No.	Question			K Level	CO
1	1	Discovery of Rabies vaccine by a. Edward Jenner b. Louis Pasteur c. Joseph lister d. Robert koch			K1	CO1
	2	The Abbe Condensor used in ----- microscopy a. Phase contrast b. Electron c. Dark-field d. Fluorescence			K1	CO1
2	3	Peptidoglycan is associated with a. Cell wall b. Cell membrane c. Capsule d. Bacterial chromosome			K2	CO2
	4	Which of the following algae known as "pond scum" a. Diatoms b. Nostoc c. Cyanobacteria d. Chlorella			K2	CO2
3	5	Name the type of bacteria which uses Co ₂ as a sole source of carbon for growth. a. Organotrophs b. Heterotrophs c. Autotrophs d. Lithotrophs			K2	CO3
	6	Which method is widely used for preservation of microbes? a. Agar slant b. coconut oil c. broth d. Lyophilisation			K2	CO3
4	7	Which of the following gene sequencing method deduced the evolutionary relationship between the taxonomic groups? a. 16S rRNA b. 5S rRNA c. 23S rRNA d. 18S rRNA			K3	CO4
	8	Most of the antibiotics derived from a. Rickettsiae b. Actinomycetes c. Archeabacteria d. Chlamydia			K3	CO4
5	9	Which of the following is an aerobic nitrogen-fixing bacterium? a. <i>Clostridium</i> b. <i>Azotobacter</i> c. <i>Rhodopseudomonas</i> d. <i>Rhodospirillum</i>			K4	CO5
	10	Whose reservoir does fossil fuel represent? a. Carbon b. Oxygen c. Helium d. Argon			K4	CO5

Cont...

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks $(5 \times 7 = 35)$

Module No.	Question No.	Question	K Level	CO
1	11.a.	Write about the Grams staining.	K1	CO1
		(OR)		
	11.b.	Compare and contrast Biogenesis and Abiogenesis.		
2	12.a.	Differentiate prokaryotes and eukaryotes.	K2	CO2
		(OR)		
	12.b.	Outline the shape and size of a bacteria.		
3	13.a.	Explain the various phases of bacterial growth.	K2	CO3
		(OR)		
	13.b.	Comment on streak plate method.		
4	14.a.	Explain about the conventional methods of microbial taxonomy.	K3	CO4
		(OR)		
	14.b.	Write a brief note on tube dilution method.		
5	15.a	State the significance of oil spills.	K5	CO5
		(OR)		
	15.b.	Discuss briefly about the phosphorus cycle.		

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks $(3 \times 10 = 30)$

Module No.	Question No.	Question	K Level	CO
1	16	Describe in detail about various Sterilization methods.	K1	CO1
2	17	Explain the detailed classification of viruses.	K2	CO2
3	18	Discuss about the types of culture medium.	K2	CO3
4	19	Write an essay about the antifungal agents.	K3	CO4
5	20	Explain the nitrogen cycle with a neat schematic representation.	K4	CO5