

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(Sixth Semester)

Branch -**MICROBIOLOGY**

MICROBIAL ECOLOGY

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	What is the first trophic level in a food chain? (i) Consumers (ii) Decomposers (iii) Producers (iv) Carnivores	K1	CO1
	2	Which pyramid is always upright? (i) Pyramid of numbers (ii) Pyramid of biomass (iii) Pyramid of energy (iv) Pyramid of organisms	K2	CO1
2	3	What type of microorganisms are commonly found in freshwater? (i) Halophiles (ii) Cyanobacteria and algae (iii) Thermophiles (iv) Methanogens	K1	CO2
	4	Which stage of wastewater treatment removes large solids? (i) Secondary treatment (ii) Tertiary treatment (iii) Primary treatment (iv) Biological treatment	K2	CO2
3	5	Which chemical method is used in dye treatment? (i) Filtration (ii) Sedimentation (iii) Coagulation (iv) Screening	K1	CO3
	6	Which dye type is synthetic? (i) Turmeric (ii) Indigo (iii) Henna (iv) Azo dye	K2	CO3
4	7	Which plant disease affects paddy? (i) Rust (ii) Smut (iii) Bacterial blight (iv) Wilt	K1	CO4
	8	What is mycorrhiza? (i) Bacterial infection (ii) Fungal association with roots (iii) Viral disease (iv) Algal growth	K2	CO4
5	9	Which organism is commonly used as an indicator of fecal contamination in water? (i) Clostridium botulinum (ii) Bacillus subtilis (iii) Escherichia coli (iv) Pseudomonas aeruginosa	K1	CO5
	10	What is the main causative agent of cholera? (i) Salmonella typhi (ii) Vibrio cholerae (iii) Escherichia coli (iv) Shigella dysenteriae	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 aquatic food chain with suitable examples.	K2	CO1
		(OR)		
	11.b.	Infer the primary and secondary succession.		
2	12.a.	Summarize the microbial populations in sewage.	K2	CO2
		(OR)		
	12.b.	Interpret the composting of solid waste.		
3	13.a.	Develop the environmental impact of dye effluents on aquatic ecosystems.	K3	CO3
		(OR)		
	13.b.	Construct the toxic effects of heavy metals on human health.		
4	14.a.	Identify the difference between rhizosphere and rhizoplane.	K3	CO4
		(OR)		
	14.b.	Examine the types of mycorrhizae.		
5	15.a.	Assess the major water-borne pathogens and their role in disease production.	K4	CO5
		(OR)		
	15.b.	Interpret the advantages of biogas as a renewable energy source.		

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	Illustrate the measurement, types and importance of species diversity.	K2	CO1
2	17	Explain the stages of wastewater treatment with diagrams.	K2	CO2
3	18	Organize the biodeterioration of leather, paper, pulpwood, and textiles.	K3	CO3
4	19	Analyze the role of microorganisms in plant diseases and their economic impact.	K4	CO4
5	20	Elaborate the principles, methods, and significance of BOD and COD in wastewater analysis.	K6	CO5

Z-Z-Z END