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22MBU101N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2025
(First Semester)

Branch – **MICROBIOLOGY**

FUNDAMENTALS OF 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 scientist is most famously associated with the development of the germ theory of disease? (i) Louis Pasteur (ii) Charles Darwin (iii) Alexander Fleming (iv) Gregor Mendel	K1	CO1
	2	Mycology is the study of: (i) Bacteria (ii) Viruses (iii) Fungi (iv) Protozoa	K2	CO1
2	3	Which of the following is a characteristic feature of Gram-negative bacteria? (i) Presence of an outer membrane (ii) Presence of teichoic acids (iii) Lack of lipopolysaccharides (iv) Thick peptidoglycan layer	K1	CO2
	4	What color do Gram-positive bacteria appear after Gram staining? (i) Pink (ii) Purple (iii) Green (iv) Blue	K2	CO2
3	5	What is the primary photosynthetic organelle in an algal cell? (i) Mitochondrion (ii) Nucleus (iii) Endoplasmic reticulum (iv) Chloroplast	K1	CO3
	6	The cell wall of most algae is composed of which major polysaccharide? (i) Chitin (ii) Peptidoglycan (iii) Cellulose (iv) Keratin	K2	CO3
4	7	Which of the following fungi is used in the production of antibiotics? (i) *Penicillium notatum* (ii) *Saccharomyces cerevisiae* (iii) *Aspergillus niger* (iv) *Rhizopus stolonifer*	K1	CO4
	8	*Rhizopus stolonifer* is commonly known as: (i) Black bread mold (ii) Blue-green mold (iii) Smut fungus (iv) Rust fungus	K2	CO4
5	9	Holozoic nutrition is characterized by i) Absorption of dissolved nutrients ii) Ingestion of solid food followed by digestion iii) Feeding on dead and decaying matter iv) Photosynthesis	K1	CO5
	10	Cilia and flagella are used for: (i) Digestion (ii) Locomotion (iii) Photosynthesis (iv) Excretion	K2	CO5

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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.	Explain the features of spontaneous disproval generation theory.	K2	CO1
		(OR)		
	11.b.	Outline the contributions of Antonie van Leeuwenhoek and Alexander Fleming.		
2	12.a.	Explain the characteristic of bacteria cell wall.	K2	CO2
		(OR)		
	12.b.	Explain the cell membrane organization of flagella and their motility pattern.		
3	13.a.	Explain the thallus structure and nutrition of algae.	K2	CO3
		(OR)		
	13.b.	Explain the methods of reproduction in Algae.		
4	14.a.	Detail an account on reproduction of fungi.	K2	CO4
		(OR)		
	14.b.	Illustrate the life cycle pattern of *Rhizopus stolonifer.*		
5	15.a.	Discuss about the different stages of amoeba.	K2	CO5
		(OR)		
	15.b.	Outline the classification of protozoa.		

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 the contributions made by Joseph Lister and Robert Koch?	K5	CO1
2	17	Comparison between the cellular morphology of prokaryotic and Eukaryotic cells.	K5	CO2
3	18	Discuss about the commercial products derived from Algae.	K6	CO3
4	19	Detail an account on classification of Fungi with suitable examples.	K5	CO4
5	20	Explain the reproduction of *Paramecium caudatum.*	K5	CO5

Z-Z-Z END