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22BCU206N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2025
(Second Semester)

Branch- **BIOCHEMISTRY**

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	Label the part of light microscope which is responsible for magnifying the specimen. a) Objective lens b) Eyepiece lens c)Condenser lens d) Stage	K1	CO1
	2	Clarify the primary source of energy for most microorganisms. a) Proteins b) Carbohydrates c) Fats d) Nucleic acids	K2	CO1
2	3	Which group of bacteria is known for its ability to live in extreme salty environments? a) Actinomycetes b) Cyanobacteria c) Thermophiles d) Halophiles	K1	CO2
	4	Explain the primary mode of reproduction in yeasts. a) Binary fission b) Budding c) Sporulation d) Conjugation	K2	CO2
3	5	What is the term for the relationship between a host and a parasite where the parasite benefits and the host is harmed? a) Parasitism b) Symbiosis c) Mutualism d) Commonsalism	K1	CO3
	6	Interpret the causative agent of AIDS. a) Herpes simplex virus b) Hepatitis B virus b) Human immunodeficiency virus d)Human papillomavirus	K2	CO3
4	7	Choose one of the following as a physical mutagen. a) Ethyl methanesulfonate b) UV radiation c) Sodium azide d) Acridine orange	K1	CO4
	8	Infer the type of life cycle which is exhibited by bacteriophage T4. a) Lysogenic cycle b) Citric acid cycle c) Lytic cycle d) Urea cycle	K2	CO4
5	9	Tell the role of Rhizobia in soil. a) To fix atmospheric nitrogen b) To solubilize phosphorus c) To degrade organic matter d) To produce antibiotics	K1	CO5
	10	Show the primary function of a fermentor in industrial microbiology. a) To provide optimal growth conditions for microorganisms b) To separate products from the medium c) To monitor temperature and pH d) To sterilize the medium	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.	Explain the principle and applications of Electron microscope.	K2	CO1
		(OR)		
	11.b.	Illustrate the principle and technique of Acid-fast staining.		
2	12.a.	Analyze the characteristics of Mycoplasmas.	K4	CO2
		(OR)		
	12.b.	List out the characteristics of Fungi.		
3	13.a.	Examine the role of normal human microflora in maintaining health and preventing disease.	K4	CO3
		(OR)		
	13.b.	Describe the aetiology and symptoms of the common cold.		
4	14.a.	Interpret the principle and procedure of replica plating.	K5	CO4
		(OR)		
	14.b.	Narrate the classification of viruses with examples.		
5	15.a.	Discuss the role of Mycorrhizae in plant nutrition, including the mechanisms of nutrient uptake and transfer.	K6	CO5
		(OR)		
	15.b.	Build the steps of the sulfur cycle and the role of microbes in each step.		

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	Compile the phases of Bacterial growth curve. Add a note on its significance.	K6	CO1
2	17	Elucidate the morphology of bacteria, including their component parts and cell wall structure with neat diagram.	K5	CO2
3	18	Explain aetiology, pathogenesis and symptoms of Cholera.	K5	CO3
4	19	Compare the lytic and lysogenic cycles of bacteriophages.	K5	CO4
5	20	Elaborate on downstream processing of Penicillin.	K6	CO5

Z-Z-Z END