

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(Fourth Semester)

Branch - ZOOLOGY

MICROBIOLOGY AND IMMUNOLOGY

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	Who is the father of microbiology? a) Robert Koch b) Louis Pasteur c) Antony van Leeuwenhoek d) Joseph Lister	K1	CO1
	2	Bacteriophage is best described as: a) A type of fungus b) a virus that infects bacteria c) a bacterial spore d) a bacterial enzyme	K2	CO1
2	3	Which microorganism is mainly used in bread making? a) Lactobacillus b) Sachharomyces cerevisiae c) Penicillium d) Rhizobium	K1	CO2
	4	Pasteurization of milk is done primarily to a) improve taste b) kill pathogenic microorganisms c) increase fat content d) reduce viscosity	K2	CO2
3	5	Which of the following is used as a microbial pesticide? a) Bacillus thuringiensis b) Penicillium notatum c) Lactobacillus bulgaricus d) Streptomyces griseus	K1	CO3
	6	Rhizobium helps plants mainly by: a) fixing atmospheric nitrogen b) decomposing cellulose c) producing antibiotics d) enhancing photosynthesis	K2	CO3
4	7	The organ that is both primary and secondary lymphoid organ is a) Thymus b) spleen c) lymph node d) bone marrow	K1	CO4
	8	Which of the following statements about innate immunity is correct? a) It develops only after exposure to pathogens b) It is specific to a particular pathogen c) It acts as the first line of defense d) It involves memory cells	K2	CO4
5	9	Which immunoglobulin is present in the highest concentration in blood? a) IgA b) IgE c) IgG d) IgM	K1	CO5
	10	A mismatch in organ transplantation can cause: a) immunodeficiency b) hypersensitivity c) graft rejection d) autoimmunity	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 structure of bacteriophage with a neat labelled diagram.	K2	CO1
	(OR)			
	11.b.	Demonstrate the different types of staining procedures used for the observation of bacteria.		
2	12.a.	Apply your knowledge to explain the role of yeast in the food industry with suitable examples.	K3	CO2
	(OR)			
	12.b.	Illustrate and explain the methods of food preservation used in modern food industries.		
3	13.a.	Describe the use of <i>Bacillus thuringiensis</i> as a microbial pesticide and its role in pest control.	K3	CO3
	(OR)			
	13.b.	Explain with examples how aerobic and anaerobic microbial processes are applied in industry.		
4	14.a.	Examine the differences between innate and acquired immunity.	K4	CO4
	(OR)			
	14.b.	Distinguish the humoral and cell media lid immunity.		
5	15.a.	Compare the light and heavy chains of immunoglobulin and explain their functional significance with a neat labelled diagram.	K4	CO5
	(OR)			
	15.b.	Examine the immunological basis of organ transplantation by classifying the stages of graft rejection and their management.		

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	Examine the structural and reproductive features of bacteria.	K4	CO1
2	17	Compare the role of beneficial microbes and spoilage organisms in the food industry.	K4	CO2
3	18	Examine the process of alcohol production.	K4	CO3
4	19	Discuss the cells of immune system and their functions with appropriate diagrams.	K4	CO4
5	20	Analyze the mechanisms of hypersensitivity reactions and their effect on human health.	K4	CO5

Z-Z-Z END