

(FOR THE CANDIDATES ADMITTED

23UZY613

DURING THE ACADEMIC YEAR 2023-2026 ONLY)

REG.NO. :

N.G.M. COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : MAY 2026

B.Sc., ZOOLOGY

MAXIMUM MARKS: 75

SEMESTER-VI

TIME : 3 HOURS

PART - III

23UZY613– MICROBIOLOGY AND IMMUNOLOGY

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

(K1)

1. Yeast belongs to which group of fungi?
a) Zygomycetes b) Ascomycetes c) Basidiomycetes d) Deuteromycetes
2. The protein coat of a virus is called_____
a) Capsid b) Capsule c) Envelope d) Peptidoglycan
3. BCG vaccine is given to prevent_____
a) Cholera b) Tuberculosis c) Typhoid d) Diphtheria
4. Natural Killer (NK) cells are important for_____
a) Producing antibodies b) Antigen presentation
c) Phagocytosis d) Killing virus-infected and tumor cells
5. Which type of bond primarily links heavy and light chains in an antibody?
a) Hydrogen bonds b) Ionic bonds c) Disulfide bonds d) Peptide bonds

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

(K2)

6. What is the principle of Gram staining?
7. Which bacteria are responsible for fixing atmospheric nitrogen in soil?
8. How are cutaneous mycoses usually transmitted?
9. What is the role of memory cells in acquired immunity?
10. Which cells express MHC class I molecules?

SECTION – B

(5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Illustrate the phases of bacterial growth curve.

(OR)

- b) Classify staining techniques and briefly explain each type.

(CONTD 2)

12. a) Highlight the economic importance of bacteria.
(OR)
b) Describe the structural components of a bacteriophage with a labeled diagram.
13. a) Differentiate between food infection and food intoxication with examples.
(OR)
b) Design an industrial-scale fermenter and explain each component of it.
14. a) List the biochemical factors involved in Innate immunity.
(OR)
b) Compare and contrast humoral and cell mediated immunity.
15. a) Draw the lymphoid lineage and label the primary cells derived from it.
(OR)
b) Summarise the methods of immune-based diagnosis of tumors.

SECTION – C**(5 X 8 = 40 MARKS)**

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.
(K4 (Or) K5)

16. a) Describe Bergey's system of bacterial classification and its importance in modern microbiology.
(OR)
b) Classify and explain culture media based on physical nature and functional use with examples.
17. a) Illustrate the major structural components of bacteria and their functions.
(OR)
b) "Soil microbes are needed for sustainable agriculture" – Prove the statement.
18. a) Explain the types of food-borne diseases and give examples of each.
(OR)
b) Design and explain an optimized industrial penicillin production process for maximum yield and quality.
19. a) Assess the mechanism of cell-mediated immune response and the role of T – Lymphocytes.
(OR)
b) Analyze how secondary lymphoid organs contribute to the activation and proliferation of lymphocytes.
20. a) Evaluate the importance of immunoglobulin diversity in providing effective humoral immunity.
(OR)
b) Illustrate the pathway of antigen processing and presentation by MHC molecules in immune defense.
