

(FOR THE CANDIDATES ADMITTED  
DURING THE ACADEMIC YEAR 2019 ONLY)

(NO OF PAGES: 2)

19UZY613

REG.NO

NGM COLLEGE (AUTONOMOUS) POLLACHI  
END-OF-SEMESTER EXAMINATIONS: JULY- 2022

B.Sc -Zoology

MAXIMUM MARKS: 75

VI SEMESTER

TIME: 3 HOURS

PART III

MICROBIOLOGY AND IMMUNOLOGY

SECTION – A

(10 X1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS

MULTIPLE CHOICE QUESTIONS

(K1)

- Which of the following are true for Gram-negative bacteria?
  - upon alcohol treatment, the permeability of the cell wall increases
  - crystal violet-iodine (CV-I) complex is extracted
  - pore size decreases and the CV-I complex cannot be extracted
  - alcohol treatment increases the permeability of the cell wall and the CV-I complex can be extracted
- The bacterial genus where sterols are present in the cell membrane is \_\_\_\_\_
  - Vibrio*
  - Mycoplasma*
  - Escherichia*
  - Chlamydia*
- Rancidity in spoiled foods is due to \_\_\_\_\_
  - Lipolytic organisms
  - Proteolytic organisms
  - Toxigenic microbes
  - Saccharolytic microbes
- Why are lymphatic nodules are not known as a lymphatic organ?
  - because they are less in no.
  - due to their small size
  - lacks the surrounding capsule
  - both B and c
- Which of these are non-professional antigen presenting cells?
  - Macrophages
  - Dendritic cells
  - Fibroblast
  - B lymphocytes

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

(K2)

- Define sterilization.
- Draw and label the structure of Bacteriophage.
- Name any two antibiotics.
- Outline the functions of monocytes in immune defense.
- Classify the types of antigen presenting cells.

(CONTD....2)

**SECTION – B****(5 X 5 = 25 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)**

11. a) Discuss about the scope of microbiology.  
(OR)  
b) How are the bacteria classified based on their shape with an example?
12. a) Record the role of bacteria in dairy industry.  
(OR)  
b) Classify the different types of viruses based on the host.
13. a) Explain the process of Biological Nitrogen fixation.  
(OR)  
b) Write in brief about any two traditionally fermented food prepared in different parts of India.
14. a) Write a short note a. Killer T cells. B. Helper T cells.  
(OR)  
b) State the structure and functions of spleen with a neat sketch.
15. a) Explain Major Histocompatibility Complex protein and its classes.  
(OR)  
b) Illustrate the immune response to tumor.

**SECTION - C****(4 X 10 = 40 MARKS)****ANSWER ANY FOUR OUT OF SIX QUESTIONS.****(16TH QUESTION IS COMPULSORY AND ANSWER ANY THREE QUESTIONS FROM Q.NO: 17 TO 21 )****(K4) OR (K5)**

16. Bacteria play a major role in Biotechnological industry – Discuss.
17. Describe the culture techniques involved in the subculture of microbes.
18. With a neat sketch, explain the structure of bacteria and types based on gram staining.
19. What are enzymes? Analyze the applications of enzymes in the food industry.
20. What are the types and functions of lymphocytes in immune response mechanism?
21. Summarize the major types and properties of immunoglobulins.