

KAMARAJ COLLEGE (Autonomous)

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(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

(3 Pages)

Reg. No:.....

Question Code: 26E01509

Course Code : 24UFMB11

UG Degree - End Semester Examinations, April 2026

First Semester

B.Sc., MICROBIOLOGY

Basic Microbiology

(For those who joined in July 2024 onwards)

Time : 3Hours

Maximum : 75 Marks

PART - A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer :

- CO:1 1. Which of the following organisms lacks a true nucleus?
K:1 (a) Fungi (b) Bacteria
(c) Protozoa (d) Algae
- CO:1 2. Which type of cell division occurs commonly in bacteria?
K:1 (a) Budding (b) Binary Fission
(c) Meiosis (d) Mitosis
- CO:2 3. What is the study of microorganisms called?
K:1 (a) Biotechnology (b) Cytology
(c) Microbiology (d) Pathology
- CO:2 4. In which field are microorganisms widely used for antibiotic
K:2 production?
(a) Agriculture (b) Medicine
(c) Botany (d) Zoology
- CO:3 5. On what basis are bacteria mainly classified?
K:2 (a) Size (b) Shape and structure
(c) Colour (d) Habitat
- CO:3 6. What does Bergey's Manual mainly deal with?
K:1 (a) Plant classification (b) Microbial taxonomy
(c) Animal classification (d) Viral genetics

- CO:4 7. Why are staining techniques used in microbiology?
K:3 (a) To kill microorganisms (b) To identify microorganisms
(c) To grow (d) To preserve microorganisms
microorganisms
- CO:4 8. Who developed the Gram staining technique?
K:1 (a) Robert Koch (b) Louis Pasteur
(c) Hans Christian Gram (d) Alexander Fleming
- CO:5 9. Which microorganism is commonly found in soil?
K:1 (a) *Rhizobium* (b) *Plasmodium*
(c) *Entamoeba* (d) *Trypanosoma*
- CO:5 10. How are microorganisms commonly spread?
K:4 (a) Through water droplets (b) Through soil particles
(c) Through air currents (d) Through animals

PART - B (5 X 5 = 25 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 250 words.

- CO:1 11. (a) Explain the differences between the prokaryotic and
K:5 eukaryotic cells.

(OR)

- (b) Describe the structure of the bacterial cell with a neat diagram.

- CO:2 12. (a) Discuss the importance of microbes in agriculture.

K:6 **(OR)**

- (b) Elaborate the applications of microorganisms in medicine.

- CO:3 13. (a) Explain phenotypic and genotypic classification.

K:5 **(OR)**

- (b) Give an account on microbial taxonomy.

- CO:4 14. (a) Demonstrate the basic methods used for identification of
K:2 microorganisms.

(OR)

- (b) Evaluate the importance of staining techniques in microbial identification.

CO:5 15. (a) Write a detailed note on important soil microorganisms and
K:5 their roles in soil fertility.

(OR)

(b) Discuss the important microorganisms associated with water and food.

PART - C (5 X 8 = 40 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 500 words.

CO:1 16. (a) Explain the structure and organization of prokaryotes in
K:2 detail.

(OR)

(b) Describe the types of microbial cell division with suitable examples.

CO:2 17. (a) Discuss the scope and importance of microbiology.

K:5

(OR)

(b) Explain the role of microorganisms in environmental and industrial applications.

CO:3 18. (a) Describe the principles and methods of microbial
K:4 classification.

(OR)

(b) Explain the structure and significance of Bergey's Manual of Systematic Bacteriology.

CO:4 19. (a) Discuss the different methods used for identification of
K:5 microbes from various sources.

(OR)

(b) Explain molecular methods of microbial identification.

CO:5 20. (a) Summarize the important microorganisms found in soil,
K:2 water and air.

(OR)

(b) Describe the role of microorganisms in food and other environmental sources.