

Reg. No. : .....

(6 pages)

Code No. : 30796 E Sub. Code : EMMI 11

B.Sc. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2023.

First Semester

Microbiology — Core

FUNDAMENTALS OF MICROBIOLOGY AND  
MICROBIAL DIVERSITY

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Small pox vaccine was first discovered by \_\_\_\_\_
- (a) Robert Koch  
(b) Louis Pasteur  
(c) Lord Lister  
(d) Edward Jenner

6. Bacterial growth phase is known as \_\_\_\_\_
- (a) Log phase (b) Lag phase  
(c) Decline phase (d) Death phase
7. Condensation of light in light microscope is by \_\_\_\_\_
- (a) Objective (b) Condenser  
(c) Ocular (d) None of the above
8. In electron microscope, which material is used as an objective lens?
- (a) Magnetic coils  
(b) Superfine glass  
(c) Aluminum foils  
(d) Electrons
9. Antiseptic methods were first introduced by \_\_\_\_\_
- (a) Lord Lister (b) Iwanowski  
(c) Edward Jenner (d) Beijiernick
10. Temperature used for hot-air oven is
- (a) 100° C for 1 hour  
(b) 120° C for 1 hour  
(c) 160° C for 1 hour  
(d) 60°C for 1 hour

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2. In extreme saline conditions which of the following is found?
- (a) Mycobacteria  
(b) Eubacteria  
(c) Cyanobacteria  
(d) Archaeobacteria
3. The main feature of prokaryotic organism is \_\_\_\_\_
- (a) Absence of locomotion  
(b) Absence of nuclear envelope  
(c) Absence of nuclear material  
(d) Absence of protein synthesis
4. Bacterial capsule is chemically composed of \_\_\_\_\_
- (a) Polypeptide  
(b) Polynucleotides  
(c) Polysaccharides  
(d) Polypeptides or polysaccharides
5. The principle involved in the streak plate method is \_\_\_\_\_
- (a) Separation (b) Streaking  
(c) Isolation (d) Dilution

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write the contributions of Louis Pasteur.  
Or  
(b) Give short note on ecological niche.
12. (a) Explain the difference between eukaryotes and prokaryotes.  
Or  
(b) Explain the structure of bacterial cell wall.
13. (a) What is enriched and selective media? Give examples.  
Or  
(b) Write a note on anaerobic culture techniques.
14. (a) Define the following :
- (i) Numerical aperture  
(ii) Resolving power  
(iii) Magnification  
Or  
(b) What is acid fast staining? Explain.

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15. (a) Explain the working principle and applications of autoclave.

Or

- (b) What are antimicrobial agents. Give two examples with their mode of action?

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Describe the features of Whitakers five kingdom concept.

Or

- (b) Explain the methods of conservation of biodiversity.

17. (a) Elaborate the general characteristics of bacteria.

Or

- (b) Explain the structure of molds and yeasts, and add note on sexual and asexual spores of fungi.

18. (a) Explain pure culture techniques in detail.

Or

- (b) Write in detail about quantitative methods of measurement of microbial growth.

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19. (a) Explain the structure and functions of phase contrast microscopy.

Or

- (b) Write about the principle, construction and applications of Scanning Electron Microscope.

20. (a) Elaborate the different methods of dry heat sterilization.

Or

- (b) Explain about different disinfectants used in microbiology laboratory and their mode of action.

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