

B.Sc.(CBCS) DEGREE EXAMINATION, APRIL 2021

FIRST SEMESTER

MICROBIOLOGY – MAIN

FUNDAMENTALS OF MICROBIOLOGY AND MICROBIAL DIVERSITY

(For those who joined in July 2020 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 X 1 = 10 marks)

Answer ALL questions, Choose the correct answer

1. ----- discovered the process of phagocytosis
 - a) Elie Metchnikoff
 - b) Edward Jenner
 - c) Louis Pasteur
 - d) Joseph Lister
2. The discoverer of penicillin was
 - a) Alexander Flemming
 - b) Robert Koch
 - c) Joseph Lister
 - d) Antony Van Leeuwenhoek
3. Sterilization means
 - a. Purification of products
 - b. Recovery of products
 - c. Elimination of contamination
 - d. All of the above
4. Which of the following is true?
 - a. Agar has nutrient properties
 - b. Chocolate medium is selective medium
 - c. Addition of selective substances in a solid medium is called enrichment media
 - d. Nutrient broth is a basal medium
5. NAM means
 - a. N-acetyl murein
 - b. N-acetyl muramic acid
 - c. N-acetyl muramic acid
 - d. None of the above
6. "Grape like clusters" are the morphological appearance of
 - a. *C.perfringens*
 - b. *Staphylococcus aureus*

Continuation Sheet

- c. *Streptococcus pyogenes*
- d. All of the above
7. Methanogens belongs to
- Eubacteria
 - Dinoflagellates
 - Slime molds
 - Archaeobacteria
8. Which of this bacteria is resistant to penicillin as it lacks a cell wall
- Spirochetes
 - Cyanobacteria
 - Mycoplasmas
 - Bdellovibrios
9. The study of algae is called
- Mycology
 - Phycology
 - Bacteriology
 - Helminthology
10. Virus multiplies in
- Living tissue
 - Dead tissue
 - Soil
 - Culture medium

Part B - (5×5=25 Marks)

Answer ALL Questions: choosing either (a) or (b) each answer should not exceed 250 words

- 11.a) Discuss the contributions of i)Joseph Lister ii)Martinus Beijerinck
iii)Selman.A.Waksman

(Or)

- b) Explain Metchnikoff's phagocytosis theory.

12. a).Write the working principle and applications of Scanning Electron Microscopy.

(Or)

- b) Explain selective media with examples

13. a). With neat diagram explain the gram negative bacterial cell wall.

Continuation Sheet
(Or)

b) Write about the morphology, cultural and biochemical characteristics of *E.coli*

14. a) Write note on sulphur bacteria and its significance.

(Or)

b) Explain the general characteristics of spirochetes. Add note on the disease causing members of spirochetes.

15. a) List out the economic importance of algae.

(Or)

b) With neat diagram explain the structure and characteristics of amoeba.

Part C - (5×8=40 Marks)

**Answer ALL Questions: Each answer should not exceed either (a) or (b) choosing
600 words:**

16.a) Discuss the contributions of Louis Pasteur and Robert Koch to the field of Microbiology.

(Or)

b) Explain the detail about spontaneous generation and its disproval.

17. a) Write the principle, instrumentation, operation and applications of Dark field Microscopy

(Or)

b) Explain in detail about different methods of sterilization techniques used in microbiology laboratory. How ionizing radiation used for sterilization?

18. a) Draw a neat sketch of a bacterial cell and describe their structure, functions of cell membrane, cytoplasm and nucleoid.

(Or)

b) Briefly explain the characteristics of genus *Clostridium*.

19. a) List out the characteristics of Archaeobacteria. How it differ from Eubacteria?

(Or)

b) Explain the general characteristics of Actinomycetes. Add note on similarities and differences between actinomycetes and fungi.

20. a) Explain in detail about the general characteristics of protozoa.

(Or)

b) Briefly discuss about the general characteristics of viruses.