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Reg. No. :

Code No. : 20540 E Sub. Code : CMMI 11

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

First Semester

Microbiology – Core

FUNDAMENTALS OF MICROBIOLOGY AND
MICROBIAL DIVERSITY

(For those who joined in July 2021 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Scientist who discovered germ theory of disease.
(a) Robert Koch (b) Louis Pasteur
(c) Edward Jenner (d) Hansen
2. Phagocytic phenomenon was discovered by _____
(a) Pasteur (b) Edward Jenner
(c) Metchnikoff (d) Robert Koch

3. Choose the various composition of peptidoglycan subunit of bacteria.

- (a) N-acetylglucosamine
- (b) N-acetyl muramic acid
- (c) lipid and protein
- (d) Both (a) and (b)

4. Predict the space between cell wall and cell membrane of bacteria.

- (a) periplasmic space (b) matrix
- (c) intercellular space (d) cytoplasm

5. Name the instrument is used for sterilizing the media after it has been prepared.

- (a) Incubator
- (b) Autoclave
- (c) Laminar air flow chamber
- (d) Filters

6. _____ is the concentration of agar in solid media.

- (a) 3 to 4 % (b) 1.5 to 2 %
- (c) 4 to 5 % (d) 0.5 to 1 %

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7. Select the following bacteria without cell wall.

- (a) Cyanobacteria (b) Mycoplasma
(c) Viruses (d) Protozoa

8. Spirochetes are flexible thin walled _____

- (a) Rod (b) Spiral rods
(c) Cocci (d) Spherical cell

9. Chlamydomonas is a _____.

- (a) Green algae (b) Red algae
(c) Brown algae (d) None of these

10. Predict the mode of nutrition in *Amoeba*.

- (a) parasitic (b) Holozoic
(c) Saprophytic (d) Holophytic

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Describe the Anton van leewenhock contribution in the discovery of microscope.

Or

(b) Predict the contribution of Joseph lister.

12. (a) Illustrate the cell membrane of eubacteria.

Or

(b) Explain the major characteristics of *Clostridium*.

13. (a) Illustrate the working principle of scanning electron microscope and its importance.

Or

(b) Explain the different types of culture media with examples and their uses.

14. (a) Select the characteristics of Archaeobacteria with examples.

Or

(b) Predict the characters of sulphur bacteria.

15. (a) Illustrate the characteristics and structure of *Aspergillus*.

Or

(b) Interpret the general characteristics of *Chlamydomonas*.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Summarize the theory of spontaneous generation. Describe the experiments performed by Louis Pasteur and Francisco Redi to prove this theory.

Or

- (b) Discuss the contributions of Martinus Beijerinck and Edward Jenner.

17. (a) Explain the principles and application of bright field microscopy with neat diagram.

Or

- (b) Examine the various methods of sterilization with suitable examples.

18. (a) Illustrate the ultra structure of bacterial flagella and its types.

Or

- (b) Differentiate between Gram positive and Gram negative cell wall structure of bacteria with neat diagram.

19. (a) Assess the various distinguishing characteristics of *Streptomyces*.

Or

- (b) Predict the morphological characteristics of methanogenic bacteria and its importance,

20. (a) Explain the morphology and ultra structure of *Amoeba*.

Or

- (b) Illustrate the structural characteristics of Rabies virus with diagram.

