

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

First Semester

Microbiology – Core

GENERAL MICROBIOLOGY AND DIVERSITY

(For those who joined in July 2021-2022 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Who is known as the father of bacteriology?
 - (a) *Antony Von Leeuwehoek*
 - (b) *Louis Pasteur*
 - (c) *Robert Koch*
 - (d) *Carl Woese*

2. The scientist associated with three kingdom classification is
 - (a) *Whittaker*
 - (b) *Ernst Haeckel*
 - (c) *John Tyndall*
 - (d) *Carl Woese*
3. Which of the following light is used for getting maximum resolution?
 - (a) Orange
 - (b) Green
 - (c) Red
 - (d) Blue
4. In Gram's staining, the alcohol acts on
 - (a) Teichoic acids
 - (b) Periplasm
 - (c) Membrane Lipids
 - (d) Peptidoglycan
5. Which of the following best describes the process of 'Disinfection'?
 - (a) The elimination of all forms of microorganisms and bacterial spores
 - (b) The elimination of all forms of bacterial spores
 - (c) The reduction or elimination of microorganisms and bacterial spores
 - (d) The reduction or elimination of many microorganisms and some bacterial spores

6. Which of the following is a rich source of I vitamins?
 - (a) Peptone
 - (b) Yeast extract
 - (c) Beef extract
 - (d) Agar
7. What is the name of the special hyphal tips through which parasitic fungi absorb nutrients directly from the cytoplasm of the living host?
 - (a) Haustoria
 - (b) Mildew
 - (c) Constricting ring
 - (d) All of the above
8. Which of these entities is an indicator of the SO₂ pollution of air?
 - (a) Puffballs
 - (b) Mushrooms
 - (c) Mosses
 - (d) Lichens
9. Which one of the following is rich in proteins
 - (a) *Ulothrix*
 - (b) *Spirogyra*
 - (c) *Nostoc*
 - (d) *Chlorella*
10. The locomotory organ found in *Paramecium* sp is
 - (a) Flagella
 - (b) Cilia
 - (c) Amoeboid
 - (d) All the above

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Explain the contributions of Carl Woese.
Or
(b) Describe the role of phenotypic classification in microbial taxonomy.
12. (a) Write down the principle of fluorescent microscope.
Or
(b) Sketch the principle and application of metachromatic granule staining.
13. (a) Inspect the sterilising principle and applications of UV.
Or
(b) Outline about biological control measures.
14. (a) Quote the features of Oomycetes.
Or
(b) What do you know about deuteromycetes?

15. (a) Assess the economic importance of algae.

Or

(b) Report the characters of sporozoans.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Indicate the contributions of Louis Pasteur.

Or

(b) Discuss in detail about evolution of microbes.

17. (a) Validate the principle, merits and bottlenecks of Transmission Electron Microscope (TEM).

Or

(b) Write the principle, methodology and results of staining *Mycobacterium sp.*

18. (a) Measure the degree of fitness of different pure culture techniques of with suitable diagrams.

Or

(b) Appraise the importance of transport and enrichment media.

Page 5 Code No. : 7539

19. (a) Explain in detail about ascomycetes.

Or

(b) Describe the economical significance of fungi.

20. (a) Write down the features of euglenophyta.

Or

(b) Illustrate the types of reproduction in protozoans.

Page 6 Code No. : 7539