



35576-44629

Library
Brainware University
398, Ramkrishnapur Road, Barasat
Kolkata, West Bengal-700125



BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – B.Sc.(FND)-Hons-2024/B.Sc.(FND)-Hons-2025

Course Name – General Microbiology

Course Code - BFD20001

(Semester II)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

(i) Recall who demonstrated that open tubes of broth gets contaminated with airborne bacteria.

- a) Abbc Spallanzani
- c) Francisco Redi

- b) John Tyndall
- d) Pasteur

(ii) Who is the father of modern microbiology?

- a) Louis Pasteur
- c) A.V. Leeuwenhock

- b) Lister
- d) Robert Koch

(iii) Name the person who first demonstrated photosynthesis in a mimicked laboratory environment.

- a) Lwanowski
- c) Edward Jenner

- b) Lord Lister
- d) Beijerinck

(iv) Identify name of the process where a virus replicates and destroys a bacteria.

- a) Inhibition of bacteria
- c) Lysogenic Phase

- b) Bacterial lysis
- d) Lytic phases

(v) Cite the first phase of a growth curve is

- a) Log phase
- c) Y phase

- b) Lag phase
- d) Both a and b

(vi) Determine from the following techniques that are used in Transmission Electron Microscopy (TEM) for examining cellular structure.

- a) Negative-Staining
- c) Shadow Casting

- b) Ultrathin Sectioning
- d) All of the these

(vii) Choose what Lag phase is known as _____

- a) period of initial adjustment
- c) generation time

- b) transitional period
- d) period of rapid growth

(viii) Judge which of the following is correct in the context of the biological membranes

- a) they are symmetric bileafet structure
b) their constituent lipid and protein moieties are held together by covalent interactions
c) they are rigid assemblies of protein, lipid and carbohydrates
d) their lipid moieties are have hydrophobic and hydrophilic characters
- (ix) Determine the components of plant Ribosome
a) RNA and protein
b) Protein and lipid
c) DNA and protein
d) DNA and RNA
- (x) Interpret the structure responsible for motility of bacteria is
a) Pili
b) Flagella
c) Sheath
d) Capsules
- (xi) In the growth equation: $n = 3.3 (\log_{10} N - \log_{10} N_0)$, what is the meaning of n
a) Growth rate
b) Total population
c) Number of generations
d) Generation time
- (xii) Identify the primary characteristic of plasmids.
a) Linear DNA molecules
b) Multiple copies in the host cell
c) Essential genes for host cell survival
d) Integration into the host chromosome
- (xiii) Antonie van Leeuwenhoek is known for
a) Germ theory of disease
b) Discovery of antibiotics
c) First observation of microorganisms
d) Development of vaccines
- (xiv) Antiseptic surgery aimed to
a) Kill viruses
b) Enhance immunity
c) Prevent microbial infections during surgery
d) Promote wound healing chemically
- (xv) Excess nitrogen runoff causes algal blooms. This environmental imbalance is linked to microbial involvement in
a) Carbon cycle
b) Sulfur cycle
c) Nitrogen cycle
d) Phosphorus fixation

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain the significance of Pasteur's swan-neck flask experiment. (3)
3. What is selective toxicity? (3)
4. Explain the principle of bright field microscopy. (3)
5. Describe the structural organization of a prokaryotic cell. (3)
6. Explain the endospore and sporulation process in bacteria? (3)

OR

Differentiate between Gram-positive and Gram-negative bacteria. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Describe Metchnikoff's contribution to immunology. (5)
8. Describe the working, applications, and limitations of bright field microscopy. (5)
9. Discuss briefly the structure of the endospore with the help of diagrammatic representation (5)
10. Analyze Whittaker's Five Kingdom Classification and its contribution to microbial diversity. (5)
11. Critically analyze the classification of viruses based on genetic material. (5)
12. Explain the role of microorganisms in nutrient cycling and environmental balance. (5)

OR

Discuss the importance of microorganisms in waste management and bioremediation. (5)
