



# BRAINWARE UNIVERSITY

Term End Examination 2023-2024

Programme – B.Optomety-2022/B.Sc.(CCT)-2022/B.Sc.(MRIT)-2022/B.Sc.  
(OTT)-2022/B.Sc.(PSY)-Hons-2022/B.Optomety-2023/B.Sc.(MRIT)-2023

Course Name – General Microbiology

Course Code - GEPT202

( 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 in context of Pasteur, the correct statement
- a) Living organisms discriminate between stereoisomers  
b) Fermentation is a aerobic process  
c) Living organisms doesn't discriminate between stereoisomers  
d) Both a and b
- (ii) Recall the demonstration that open tubes of broth remained free of bacteria when air was free of dust was done by?
- a) Abbc Spallanzani  
b) John Tyndall  
c) Francisco Redi  
d) Pasteur
- (iii) Identify the type of spores that are produced sexually?
- a) Conidia  
b) Sporangiospores  
c) Ascospores  
d) None of these
- (iv) "Phagocytosis process" was described by:
- a) Koch  
b) Chamberlandt  
c) Metchnikoff  
d) Petri
- (v) Define the cell wall structural components of fungi?
- a) chitin, cellulose, or hemicellulose  
b) cellulose  
c) chitin  
d) peptidoglycan
- (vi) Cite Germ theory of disease was proposed by
- a) Sumner  
b) Jenner  
c) Koch  
d) Edward Buchner

- (vii) Identify the beneficial partners in a lichen
- a) bacteria and fungi  
b) fungi and algae  
c) fungi and roots of legume plant  
d) bacteria and roots of legume plant
- (viii) Indicate that F-plasmid is present in
- a) Gram +ve Bacteria  
b) Gram -ve Bacteria  
c) both Gram +ve and gram -ve Bacteria  
d) None of them
- (ix) Cite the following is used for the preparation of a section specimen?
- a) phenol  
b) isoamyl alcohol  
c) fixative  
d) lubricative
- (x) Choose one oxygenic photosynthetic bacteria
- a) Bacillus sp  
b) Staphylococcus sp  
c) Cyanobacteria  
d) Actinobacteria
- (xi) Determine the group to which Streptococcus belongs
- a) Gram-negative cocci  
b) Gram-positive cocci  
c) Gram-positive bacilli  
d) Gram-negative bacilli
- (xii) Determine the Mordant used in grams staining
- a) Crystal Violet  
b) Safranine  
c) Iodine  
d) All of these
- (xiii) Determine the term used for transfer of genetic material from the donor to recipient bacterium through cell contact
- a) conjugation  
b) transformation  
c) recombination  
d) transduction
- (xiv) Choose the generation time for E.coli \_\_\_\_\_
- a) 20 minutes  
b) 35 minutes  
c) 2 minutes  
d) 13 minutes
- (xv) Identify from the following the phase of rapid bacterial growth
- a) Lag Phase  
b) Logarithmic Phase  
c) Stationary Phase  
d) Decline Phase

### Group-B

(Short Answer Type Questions)  
(Answer any Five from the following)

3 x 5=15

2. Examine in brief Pasteur's work on microbial fermentations. (3)
3. Discuss the contribution of Robert Koch in the field of microbiology. (3)
4. Explain the process of endocytosis with the help of a diagram (3)
5. Determine the differences between hot air oven and autoclave (3)
6. Determine in general terms the working principle of TEM and write its application. (3)

OR

Determine a culture media. Discuss the types of culture media. (3)

### Group-C

(Long Answer Type Questions)  
(Answer any Six from the following)

5 x 6=30

7. Explain symbiotic nitrogen fixation in detail. (5)
8. Explain the process by which vaccine work to activate the immune system to prevent infectious diseases. (5)

9. Recall the scientist who disproved spontaneous regeneration theory and give a brief outline of the theory (5)
10. Describe the contributions of Louis Pasteur in the field of microbiology (5)
11. Describe the fluid mosaic model of the plasma membrane, with a suitable diagram (5)
12. Explain the process of HFR transfer and its significance in bacterial genetics. (5)

**OR**

Explain genetic mutation and classify them. (5)

\*\*\*\*\*