



## BRAINWARE UNIVERSITY

Term End Examination 2023  
 Programme – B.Sc.(CCT)-2022  
 Course Name – Microbiology  
 Course Code - BCCTC201  
 ( 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) Name the Father of microbiology  
 a) Alexander Fleming  
 b) Leeuwenhoek  
 c) Louis Pasteur  
 d) Robert Koch
- (ii) Select what Ethylene Oxide is?  
 a) physical sterilant  
 b) chemical sterilant  
 c) gas vapor sterilant  
 d) liquid sterilant
- (iii) Choose the condition in which Halophilic bacteria can grow  
 a) salt concentration is low  
 b) pH is neutral  
 c) salt concentration is high  
 d) oxygen is not present
- (iv) Name the Primaret stain used in Gram Staining  
 a) safranin  
 b) acid fuchsin  
 c) iodine  
 d) crystal violet
- (v) State how Phenol is antimicrobial agent  
 a) it can disrupt cell membrane structure  
 b) it can prevent replication process  
 c) it can damage DNAstrand  
 d) it can absorb water from cell
- (vi) Select the action Bacteriostatic agents  
 a) kill the bacteria  
 b) kill only pathogenic bacteria  
 c) kill bacterial spore only  
 d) prevent the growth of bacteria
- (vii) Determine the composition of inner surface of Autoclave  
 a) Mild steel  
 b) Stainless steel  
 c) Copper  
 d) Aluminum
- (viii) Generalise the use of iodine in Gram staining

- a) Fixative  
c) Primary stain
- b) Mordant  
d) Secondary stain
- (ix) State the correct order of staining reagents in Gram-Staining?
- a) Crystal violet, alcohol, iodine solution, safranin  
c) Crystal violet, safranin, alcohol, iodine solution
- b) Crystal violet, iodine solution, alcohol, safranin  
d) Iodine solution, crystal violet, alcohol, safranin
- (x) Choose among the following and decide which is the type of Tyndilization
- a) Intermittent sterilization  
c) Pasteurization
- b) Boiling  
d) Autoclaving
- (xi) Name the device used to grow and maintain microbiological cultures
- a) Hot air oven  
c) HEPA
- b) Autoclave  
d) Incubator
- (xii) Identify the solution used in lab to maintain sterility
- a) Sodium chloride  
c) Sodium benzoate
- b) Sodium hypochloride  
d) All of these
- (xiii) Select what Antibiotic is
- a) primary metabolite of microorganism  
c) secondary metabolite of microorganism
- b) metabolic product of mammals  
d) metabolic waste of mammals
- (xiv) Name the type of hypersensitivity reaction causes rapid anaphylaxis in response to an allergen?
- a) Type I  
c) Type III
- b) Type II  
d) Type IV
- (xv) Name the term used to describe bacteria that form clusters.
- a) Streptococci  
c) Diplococci
- b) Staphylococci  
d) Bacilli

### Group-B

(Short Answer Type Questions)

3 x 5=15

2. Discuss the morphological classification of the bacteria (3)
3. Explain the process of sterilization and its types (3)
4. Give examples of nosocomial infection and explain them (3)
5. Define Immunity and its types (3)
6. Explain the steps involved in performing an antibiotic susceptibility test. (3)

OR

- Justify how are the results of antibiotic susceptibility testing interpreted (3)

### Group-C

(Long Answer Type Questions)

5 x 6=30

7. Justify how Gram staining can be used to identify different types of bacteria. Discuss common clinical applications of this technique. (5)
8. Express in detail the treatment for malaria, and Apply the concept of its prevention. (5)
9. Propose the role of the spike (S) protein in the structure and function of COVID-19. (5)
10. Explain how disinfection differ from sterilization, and when is each method appropriate. (5)
11. Illustrate different types of antibiotics. Explain how they are used to treat different types of bacterial infections. (5)
12. Write the steps involved in ZN staining, and which chemicals are used? (5)

**OR**

Write down different types of infections that can affect the nervous system, Also discuss what (5) are some of the common signs and symptoms of these infections.

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