



BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Sc.(CCT)-2022/B.Sc.(CCT)-2023/B.Sc.(CCT)-2024

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 of the acid fast bacteria is
 - a) E.coli
 - b) Staphylococcus aureus
 - c) Mycobacterium tuberculosis
 - d) Candida albicans
- (ii) 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
- (iii) State how Phenol is antimicrobial agent
 - a) it can disrupt cell membrane structure
 - b) it can prevent replication process
 - c) it can damage DNA strand
 - d) it can absorb water from cell
- (iv) 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
- (v) Identify the use of Safranin in Gram staining process
 - a) Fixative
 - b) Mordant
 - c) Primary stain
 - d) Counter stain
- (vi) Identify among the following and decide which is the type of Tyndilization
 - a) Intermittent sterilization
 - b) Boiling
 - c) Pasteurization
 - d) Autoclaving
- (vii) Express the approximate size of the bacterial cell
 - a) 2mm in diameter
 - b) 1mm in diameter
 - c) 2 micrometer indiameter
 - d) 0.5 to 1.0 micrometer indiameter

- (viii) Identify the example of an bacterial infection
- | | |
|-----------------|-------------|
| a) Influenza | b) Malaria |
| c) Tuberculosis | d) HIV/AIDS |
- (ix) Name the term used to describe an infection that is acquired in a healthcare facility
- | | |
|----------------------------|---------------------------------|
| a) Nosocomial infection | b) Community-acquired infection |
| c) Opportunistic infection | d) Viral infection |
- (x) Identify the antibiotics often used to treat urinary tract infections
- | | |
|------------------|---------------|
| a) Ciprofloxacin | b) Ampicillin |
| c) Vancomycin | d) Vancomycin |
- (xi) Name the term used to describe the process by which immune cells engulf and destroy pathogens
- | | |
|-------------------------|--------------------------|
| a) Antibody production | b) Complement activation |
| c) Antigen presentation | d) Phagocytosis |
- (xii) Name the specialized cells that produce antibodies
- | | |
|-------------------------|----------------|
| a) T cells | b) B cells |
| c) Natural killer cells | d) Macrophages |
- (xiii) Name the type of antibody first produced in response to an antigen
- | | |
|--------|--------|
| a) IgA | b) IgD |
| c) IgE | d) IgM |
- (xiv) Select the correct temperature, pressure and time for autoclaving
- | | |
|---------------------------------------|---|
| a) 121°C at 15 lb/in square for 15min | b) 110°C at 14/5 lb/in square for 20min |
| c) 115°C at 16 lb/in for 20min | d) 116°C at 16 lb/in for 20min |
- (xv) Select the correct anaerobic bacterium name
- | | |
|--------------------------|---------------------|
| a) Lactobacillus sp | b) Vibrio cholerae |
| c) Clostridium Botulinum | d) Salmonella typhi |

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Discuss the streptococcus and staphylococcus terms in terms of bacterial morphology. (3)
3. Give examples of nosocomial infection with proper explanation. (3)
4. Name primary stain, counter stain and mordant name in case of AFB stain. (3)
5. Discuss the Koch Postulates by mentioning the importance in the field of medical microbiology. (3)
6. Women are more prone to UTI than men- analyze and explain the statement. (3)

OR

Explain the effectiveness of an antimicrobial agent with respect to penetration power and stability of the agent. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Differentiate between active TB and latent TB. (5)
8. Explain the basic structure of HIV. (5)
9. Differentiate between innate immunity and acquired immunity. (5)
10. Write down the advantages and disadvantages of using phenol as a disinfectant with mentioning mode of action of phenol. (5)
11. Bacteria A- Pinkish colour under microscopic view After doing Gram Stain and also need special supplement nutrient for growth. Write an interpretation of your observation point on (5)

Gram staining procedure and bacterial culture medium of said bacterium.

12. Under microscope, a microbiologist saw purple colour bacteria against a bright field- what will (5)
be your explanation regarding the same.

OR

Decolorizing step of Gram staining procedure is the most critical step- how would you explain (5)
it.

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