BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – B.Sc.(CCT)-2021/B.Sc.(CCT)-2022/B.Sc.(CCT)-2023
Course Name – CSSD Procedures
Course Code - BCCTC604
(Semester VI)

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) Select what is the primary purpose of disinfection.
a) Eliminating all microorganisms b) Reducing the microbial load to a safe level
c) Killing only pathogenic microorganisms d) Preventing microbial growth

(ii) Select which sterilization method uses high pressure and steam.
a) Dry heat sterilization b) Ethylene oxide sterilization
c) Autoclaving d) Radiation sterilization

(iii) Select the minimum recommended temperature and duration for autoclaving at 15 psi.
a) 100°C for 15 minutes b) 121°C for 15 minutes
c) 121°C for 30 minutes d) 160°C for 10 minutes

(iv) Describe what is the primary target of ionizing radiation in sterilization.
a) Proteins b) DNA
c) Lipids d) Carbohydrates

(v) Describe the primary advantage of filtration as a sterilization method.
a) Fast sterilization b) No heat required
c) Effective against spores d) Suitable for heat-sensitive materials

(vi) Describe which sterilization method is suitable for sterilizing heat-sensitive plastic materials.
a) Autoclaving b) Dry heat sterilization
c) Radiation sterilization d) Ethylene oxide sterilization

(vii) Describe what is the primary target of ethylene oxide in sterilization?
a) Moisture b) Proteins
c) DNA d) Lipids

(viii) Select the major advantage of dry heat sterilization over moist heat sterilization
a) Faster sterilization times b) Lower temperatures required
c) Suitable for heat-sensitive materials d) Superior microbial kill

(ix) Choose which type of micro-organisms Dry heat sterilization is effective in killing.

a) Bacteria and viruses
b) Bacteria, viruses, and spores
c) Spores only
d) Fungi and yeast

(x) Select which of the following is a gaseous sterilization method

a) Autoclaving
b) Dry heat sterilization
c) Ethylene oxide gas sterilization
d) Filtration

(xi) Select the minimum recommended temperature for ethylene oxide gas

a) 300°C
b) 500°C
c) 55°C
d) 600°C

(xii) Choose the recommended dose of radiation for effective sterilization by gamma rays

a) Varies depending on material
b) 10 kGy (kilograys)
c) 100 Gy (gray)
d) 1 Sv (sievert)

(xiii) Select which of the following materials is commonly used for carbonizing surgical instruments

a) Steel
b) Plastic
c) Wood
d) Aluminum

(xiv) Select which of the following is a low-level disinfectant.

a) Glutaraldehyde
b) Hydrogen peroxide
c) Soap
d) Bleach

(xv) Select what is the primary purpose of boiling surgical instrument

a) Sterilization
b) Cleaning
c) Sharpening
d) Decontamination

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Explain the process of steam sterilization using an autoclave. (3)
3. Describe the principles of validation and monitoring for ethylene oxide sterilization. (3)
4. Discuss the role of temperature in autoclave sterilization. (3)
5. Discuss the mechanisms of action for different types of disinfectants (e.g., chemical, physical). (3)
6. Write in brief about chemical sterilization. (3)

OR

Write the types of chemicals that are commonly used for chemical sterilization, (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Briefly explain the mechanism of action of chemical sterilants (5)
8. Summerize the impact of the covid-19 pandemic on sterilization hazard prevention in healthcare. (5)
9. Summerize the potential contamination risks associated with improperly handled boiling sterilization processes. (5)
10. Describe the various components and features of an autoclave and their functions. (5)
11. State the implications of moisture-sensitive materials in dry sterilization processes. (5)
12. Compare and contrast chemical sterilization with other sterilization methods, like autoclaving and radiation (5)

OR

Analyze the role of heat-sensitive medical instruments and the precautions necessary to maintain their functionality and sterility during sterilization. (5)

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