

B.Sc., CARDIOPULMONARY AND PERFUSION CARE TECHNOLOGY
SECOND YEAR

SUBJECT CODE & NAME – 1411 – CLINICAL MICROBIOLOGY

PUZZLES - TOPIC – STERILIZATION – DRY HEAT METHODS

1. Clinical Case Scenario-Based Puzzle

Type: Clinical Decision-Making Puzzle

Objective: Apply dry heat sterilization principles to prevent nosocomial infection in a surgical setting.

Case Scenario:

A 45-year-old diabetic patient is scheduled for emergency debridement of a foot ulcer in a rural hospital. The OT has only **one set of reusable surgical instruments**. After the previous case, the instruments were cleaned but **not sterilized**. The nurse suggests using the **hot air oven** available in the CSSD.

Tasks (Total: 10 marks):

Task	Description	Marks
1	Identify two critical errors in the current instrument management.	2
2	Recommend the correct dry heat sterilization protocol (temp + time).	2
3	Justify why moist heat cannot be used for these instruments.	2
4	Predict one clinical consequence if sterilization is skipped.	2
5	State one limitation of hot air oven in emergency settings.	2

Clues:

- Holding time at 160°C = 60 min
- Glassware breaks if oven opened >60°C
- Metallic instruments → dry heat preferred

Rubric (10 marks):

Criteria	Excellent (2)	Good (1)	Poor (0)
Accuracy	All points correct	1 error	>1 error
Clinical Relevance	Links to patient outcome	Partial link	No link
Justification	Clear and logical	Vague	Absent or wrong