

B.Sc., PHYSICIAN ASSISTANT

SECOND YEAR

SUBJECT CODE & NAME – 1612 – 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 |