

M.Sc. MEDICAL MICROBIOLOGY
SEMESTER -IV EXAMINATION, JUNE-2026

PAPER –III : SAMPLE COLLECTION TECHNIQUES

[Time allotted: Three Hours]**[Max Marks: 100]****Note:** Read all the instructions carefully

Answer all questions in serial order, Draw suitable diagrams wherever necessary

Q. 1. Objective type questions: (Reasoning/ MCQ)**(10 x 01 = 10)**

- a. Which of the following is the preferred site for venous blood collection?
 - i. Femoral vein
 - ii. Radial artery
 - iii. Median cubital vein
 - iv. Jugular vein
- b. The antiseptic commonly used before blood culture collection is:
 - i. Normal saline
 - ii. Chlorhexidine or alcohol
 - iii. Distilled water
 - iv. Hydrogen gas
- c. Early morning sputum sample is preferred because:
 - i. It is less contaminated
 - ii. It contains higher concentration of pathogens
 - iii. It is easier to transport
 - iv. It has more saliva
- d. Which factor can affect specimen quality the most?
 - i. Delay in transport
 - ii. Patient hairstyle
 - iii. Colour of syringe
 - iv. Laboratory building size
- e. Midstream urine collection helps to:
 - i. Increase urine colour
 - ii. Reduce contamination
 - iii. Increase glucose concentration
 - iv. Decrease urine volume
- f. Which anticoagulant is commonly used for complete blood count (CBC)?
 - i. Sodium fluoride
 - ii. EDTA
 - iii. Heparin
 - iv. Citrate
- g. Which specimen is best for diagnosis of enteric fever in the first week?
 - i. Urine
 - ii. Stool
 - iii. Blood culture
 - iv. Sputum
- h. Blood culture samples should preferably be collected:
 - i. After starting antibiotics
 - ii. Before starting antibiotics
 - iii. Only at night
 - iv. After meals
- i. Which specimen is most suitable for diagnosis of pulmonary tuberculosis?
 - i. Saliva
 - ii. Nasal secretion
 - iii. Deep cough sputum
 - iv. Throat swab
- j. The main purpose of using transport media is to:
 - i. Kill microorganisms
 - ii. Preserve viability of organisms
 - iii. Change specimen colour
 - iv. Dilute pathogens

Q. 2. Structured questions**(03 x 10 = 30)**

- a. Define sample collection. Explain the importance of proper specimen collection, labelling, storage, and transportation in clinical microbiology. (CO 1, PO1)
- b. Explain the technique of urine sample collection for routine examination and urine culture. Mention the common sources of contamination. (CO 1, PO1)
- c. Describe the role of transport media in microbiology. Add notes on different transport media used for clinical specimens. (CO 1, PO1)

Q. 3. Short answer type questions**(06 x 05 = 30)**

- a. Describe the collection technique of sputum specimens for microbiological examination. (CO 1, PO1)
- b. Write a short note on transport media used in microbiology. (CO 1, PO1)
- c. List the common causes of specimen rejection in a microbiology laboratory. (CO 1, PO1)
- d. Explain the procedure of blood culture collection. (CO 1, PO1)
- e. Mention the types and uses of anticoagulants used in blood collection. (CO 1, PO1)
- f. List the universal precautions followed during specimen collection. (CO 1, PO1)

Q. 4. Long Answer type questions**(02 x 15 = 30)**

- a. Describe the collection techniques for fungal specimens from skin, hair, nail, and respiratory samples. Add notes on storage and transport. (CO 1, PO1)
- b. Explain the role of proper specimen collection in the diagnosis of infectious diseases. Discuss factors responsible for false laboratory results due to improper collection techniques. (CO 1, PO1)