

**M.Sc. (M.L.T.) Microbiology 2<sup>nd</sup> Year**

(BF/2023/12)

**Advanced and applied Microbiological techniques**

M.M.: 80

Time: 3 Hours

- Note:** 1.) *Attempt all questions.*  
2.) **ATTEMPT BOTH PARTS IN SINGLE ANSWER BOOK ONLY.**  
3.) **NO SUPPLEMENTARY SHEET SHALL BE ALLOWED/ PROVIDED**  
4.) **The Student must write Q.P. Code in the space provided on the Title page of the Answer Book.**

**Section-A**

**Write about the following:**

1. List methods of transfer of genetic material between bacterial cells. Discuss in detail transfer of genetic material by Conjugation. [8]
2. Define Catheter Associated Urinary Tract Infection (CAUTI). Discuss pathogenesis and prevention of CAUTI. [8]
3. Discuss investigations in case of outbreak of infection in burn ward. [8]
4. Discuss post exposure prophylaxis after needle stick injury. [8]
5. Enumerate physical methods of sterilization. Discuss in detail sterilization by dry heat. [8]

**Section -B**

**Write about the following:**

1. Write about types of vaccines. Discuss recent advances in viral vaccines. [8]
2. Role of Hospital Infection Control Committee (HICC) in infection control. [8]
3. What is Polymerase Chain Reaction? Discuss various types of Polymerase Chain Reactions. [8]
4. Write about different types of microscopes used in microbiology. Discuss principle and applications of fluorescence microscope. [8]
5. Discuss quality control antimicrobial susceptibility testing. [8]

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