SET A

Unique Paper Code	:	32581303
Name of the Paper	:	Medical Microbiology
Name of the Course	:	B.Sc. (H) Biomedical Science (LOCF)
Semester	:	III Semester
Duration	:	03 hours
Maximum Marks	:	75

Instructions for the candidates

- Write your Course Name, Examination Roll No., Paper Name and Unique Paper Code on the answer sheet.
- Attempt **FOUR** questions in all. All questions carry equal marks (18.75).
- Give illustrations and examples wherever required.

Q1. The gram-positive bacterial cell wall consists of a single 20 to 80 nm thick homogeneous layer of peptidoglycan lying outside the plasma membrane. In contrast, gram-negative bacterial cell wall is quite complex. Discuss all the details at molecular level with the help suitable diagrams.

Q2. During horizontal gene transfer, a piece of donor ssDNA is transferred to a recipient cell that integrates into the recipient cell's chromosome replacing a portion of the original genetic material. Explain the molecular mechanism behind horizontal gene transfer in bacteria by taking any one example of recombination.

Q3. Many microorganisms that contaminate food and water can cause acute gastroenteritis—inflammation of the stomach and intestinal lining. When food is the source of the pathogen, the condition is often called food poisoning. By taking example of any two common pathogens, discuss the ailments in details.

Q4. Drugs like penicillins, cephalosporins and vancomycin have a high therapeutic index because their target structures are not found in eukaryotic cells. Elaborate molecular mechanism of action of any of the above antibiotics with suitable diagrams.

Q5. A viral pandemic has spread in human population by bird faecal matter and nasal secretions. This virus initially infected only water fowl and birds but suddenly starts infecting humans due to antigenic shift. What do you understand by antigenic shift and how does it differ from anti-genic drift.

Q6. Single membrane bound inclusion bodies are characteristically found in bacterial cytoplasm. In your opinion if they offer any advantage to bacterial cell, then elaborate structure and function of these inclusion bodies.