

MICROBIOLOGY

PAPER – I

MICRO/D/15/18/I

Time : 3 hours

Max. Marks : 100

Important instructions:

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

Write short notes on:

1.	a) Principle and technique of plasma sterilization. b) What are its applications?	6+4
2.	a) Define Minimum Inhibitory Concentration (MIC). b) List the various techniques of determining MIC of a bacterial strain. c) Write their principles, advantages and disadvantages.	1+3+(2+2+2)
3.	Principle; technique and uses of Pulsed-Field-Gel-electrophoresis.	3+4+3
4.	Principle, technique and applications of Real Time- PCR.	2+6+2
5.	List various Enzyme Immuno Assays (EIA). Describe them with suitable examples.	3+7
6.	a) Mechanism of action of carbapenem antibiotics. b) Its scope of antibacterial activity and their resistance mechanisms.	4+(2+4)
7.	a) Define "Pathogenicity Islands". b) Its role in bacterial pathogenesis with suitable examples.	2+8
8.	Principle, uses and procedure of gene therapy.	2+4+4
9.	a) What is "In-Use Test"? b) Its procedure and application in hospital.	2+(2+6)
10.	a) What are antigen presenting cells (APCs)? b) Enumerate the different types of APCs. c) Mechanisms involved in antigen processing by various APCs.	2+3+5
