

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 11

M.Sc (Medical Microbiology) (Sem-3)

MICROBIAL BIOTECHNOLOGY AND QUALITY ASSURANCE

Subject Code : MMB-305-21

M.Code : 92529

Date of Examination : 20-06-2025

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains EIGHT questions carrying FIVE marks each and students have to attempt any SIX questions.
3. SECTION-C will comprise of two compulsory questions with internal choice in both these questions. Each question carries TEN marks.

SECTION - A

1. Write briefly :

- a) Uses of recombinant DNA (rDNA) technology.
- b) What does the term "specific DNA insert" refer to?
- c) How does the restriction endonuclease enzyme function?
- d) What constitutes a genomic library?
- e) Contrast a plasmid vector with a bacteriophage.
- f) What is gene amplification?
- g) Explain automation in the context of molecular methods.
- h) Describe a Levy-Jennings chart.
- i) What are the methods used for specimen collection?
- j) Main source of contamination in biohazard scenarios.

SECTION - B

2. What is the process for choosing the desired recombinant clone?
3. Provide information on runaway plasmids and translational fusions.
4. How does the restriction endonuclease identify sequences in gene cloning?
5. Describe cosmid vectors and artificial chromosome vectors.
6. What are the constraints of PCR in molecular methods?
7. Discuss the roles of Phoenix and Vitek 2 in automation.
8. Clarify the bio-safety levels recommended for infectious agents.
9. What are the standards set by the Clinical Establishment Act for medical laboratories?

SECTION - C

10. Discuss how to identify clones with specific DNA inserts in rDNA technology.

OR

How do you isolate and identify the target gene in gene cloning?

11. Detail the regulations, professional standards, ethical obligations and code of conduct related to IVD.

OR

Elaborate on the benefits of PCR and RAPD techniques.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.