Roll No.							

25-MB-43-A

M.Sc. IV SEMESTER [MAIN/ATKT] EXAMINATION
MAY - JUNE 2025

MICROBIOLOGY

Paper - III

[Pharmaceutical Microbiology]

[Max. Marks : 75] *[Time : 3:00 Hrs.]* *[Min. Marks : 26]*

Note : Candidate should write his/her Roll Number at the prescribed space on the question paper.
Student should not write anything on question paper.
Attempt all five questions. Each question carries an internal choice.
Each question carries **15 marks.**

Q. 1 a) Define Good laboratory practices (GLP). List the main principles that a microbiology laboratory should follow under GLP guidelines. **(05 marks)**

b) Assess the importance of Safety protocols in a microbiology laboratory. **(10 marks)**

OR

Design a basic plan for setting up a microbiology laboratory for a new pharmaceutical company with special reference to "Sterile product manufacturing unit". **(15 marks)**

Q. 2 a) Define "Microbial Limit Test" and "Sterility Test". **(05 marks)**

b) Explain the role of WHO and US certifications in pharmaceutical quality assurance and quality management. **(10 marks)**

OR

Analyze the causes of microbial contamination in sterile injectables, non-injectables, ophthalmic preparations and implants. **(15 marks)**

Q. 3 a) Enumerate different classes of antibiotics and give two examples of each class. **(7½ marks)**

b) Describe the mode of action of "Aminoglycoside" and "Chloramphenicol". **(7½ marks)**

OR

a) Differentiate between "antifungal" and "antiviral" drugs based on their mechanisms. **(7½ marks)**

b) Propose a combination therapy using two different classes of antibiotics for a patient with a bacterial infection. **(7½ marks)**

P.T.O.

Q. 4 a) Analyze the clinical implications of horizontal gene (R plasmid) transfer in bacterial antibiotic resistance. **(05 marks)**

b) Explain the molecular principles behind drug targeting in gene therapy. **(10 marks)**

OR

Analyze the role of Nanoparticles in enhancing antimicrobial agent delivery. **(15 marks)**

Q. 5 a) Explain the importance and production of biopharmaceuticals by genetically engineered cells. **(7½ marks)**

b) Explain the role of monoclonal antibodies in pharmaceutical processes. **(7½ marks)**

OR

a) Compare traditional vaccines and synthetic peptide vaccines.

b) Evaluate the potential risks and benefits of new vaccine technologies.