


RAN-2203080601040003
M.Sc. (Sem. I) Examination November - 2025
Microbiology (Paper : MB-1004) Biophysical Techniques and Instrumentation
સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book.
- (2) Figures to the right indicate full marks of the question.
- (3) Draw neat and labeled diagrams whenever necessary.

Seat No.:

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Student's Signature

- Q. 1. Answer the following (Any Two) (18)**
- A. Explain strand displacement amplification technique.
 - B. Briefly describe the use of RFLP to analyze prokaryotes. Give a short note on Restriction Fragment End Labelling.
 - C. Discuss Non-amplified nucleic acid probes in detail.
- Q. 2. Answer the following (Any Two) (18)**
- A. Write about various support media used in electrophoresis.
 - B. Describe gel permeation chromatography with perspective of protein separation.
 - C. Discuss ion exchange chromatography in detail.
- Q.3. Answer the following (Any Two) (18)**
- A. Compare and contrast between photometer and spectrophotometers.
 - B. Explain principle, instrumentation and applications of IR Spectroscopy.
 - C. Discuss mass analyzer in detail and state the applications of mass spectrometry.
- Q. 4. Answer the following (Any Two) (16)**
- A. Write basic principle and instrumentation of NMR spectrometry.
 - B. Explain various types of NMR spectrometers and its applications.
 - C. Give a brief note on instrumentation for X-Ray spectrometry.