

Roll No. ....

**DD-479**

**M. Sc. (Second Semester)  
EXAMINATION, May-June, 2020**

**MICROBIOLOGY**

**Paper Third**

**(Instrumentation and Molecular Techniques)**

*Time : Three Hours*

*Maximum Marks : 80*

**Note :** Attempt all the *five* questions. *One* question from each Unit is compulsory. All questions carry equal marks.

1. Make notes on the following :
  - (i) Principle of Atomic Absorption Spectroscopy
  - (ii) Image Processing methods in Microscopy
  - (iii) Flow Cytometry
  - (iv) RAPD

**Unit—I**

2. Discuss the principle and techniques of centrifugation and describe some important applications.

*Or*

Write short notes on the following :

- (a) UV-visible spectrophotometry
- (b) Technique of PAGE

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**Unit—II**

3. Compare the principles of scanning and transmission electron microscope giving advantages over light microscope.

*Or*

Give brief account of the following :

- (a) Principle and applications of microtomy
- (b) Principle and applications of lyophilization

**Unit—III**

4. Give a detailed account of HPLC and its applications.

*Or*

Write short notes on the following :

- (a) Western blot
- (b) RIA

**Unit—IV**

5. Describe molecular technique used for isolation, purification and separation of protein from biological system.

*Or*

Write short notes on the following :

- (a) Microarray based techniques
- (b) DNA sequencing by Sanger's method.

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