

**FACULTY OF SCIENCE**

**M.Sc. I-Semester Examination, January 2018**

**Subject : MICROBIOLOGY**

**Paper : III**

**Research Methodology and Techniques**

**Time : 3 hours**

**Max. Marks : 80**

**Note : Answer all questions from Part-A and Part-B. Each question carries 4 marks in Part-A and 12 marks in Part-B.**

**PART – A (8 x 4 = 32 Marks)**  
(Short Answer Type)

- 1 Optical rotation
- 2 Colourimetry
- 3 TLC
- 4 Autoradiography
- 5 't' test and its significance
- 6 Poisson distribution
- 7 Discuss about mail merge in MS word.
- 8 Explain the uses of any four DOS commands.

**PART – B (4 x 12 = 48 Marks)**  
(Essay Answer Type)

- 9 a) Explain the principle and significance of ESR spectroscopy.  
**OR**  
b) Explain the principle and applications of PAGE.
- 10 a) What are the methods to study the intermediary metabolism in microbes? Explain in detail.  
**OR**  
b) How can you use mutants in the study of metabolism?
- 11 a) Normal distribution and binomial distribution.  
**OR**  
b) Explain measures of central tendency with examples.
- 12 a) Explain the architecture of a computer system.  
**OR**  
b) Distinguish between operating system and application software. How are computers used in Education?

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