

## First Semester B. Sc. Examination

## MICROBIOLOGY

## Paper-I

## (History and Microbial Morphology)

Time : Three Hours ]

[ Max. Marks : 50

- N. B. : (1) All questions are compulsory.  
(2) All questions carry equal marks.  
(3) Draw diagrams and give examples wherever necessary.

1. Describe the contribution of Louis Pasteur in the field of Microbiology.

**OR**

What is Microbiology ? Give scope of various branches of Microbiology. 10

2. Describe the structure of cell wall of Gram positive bacteria.

**OR**

Define plasmids. Describe various types of plasmids and their functions. 10

3. (a) Describe various types of flagellar arrangement in bacteria.  $2\frac{1}{2}$   
(b) Describe germination of spore in bacteria.  $2\frac{1}{2}$   
(c) Why endospores are resistant to the action of chemicals and temperature ?  $2\frac{1}{2}$



- (d) Describe asexual spores of fungi in brief. .  $2\frac{1}{2}$

OR

- (e) Write a note on capsule and slime layer of bacteria.  $2\frac{1}{2}$
- (f) What are pili ? Discuss different types of pili and its functions.  $2\frac{1}{2}$
- (g) Draw well – labelled diagram of flagella.  $2\frac{1}{2}$
- (h) Diagrammatically illustrate the process of endospore formation.  $2\frac{1}{2}$
4. (a) Explain the Numerical taxonomy method of bacterial classification. 5
- (b) Describe DNA homology experiment. 5

OR

- (c) Give the salient features of Bergey's manual of determinative bacteriology 9<sup>th</sup> edition. 5
- (d) Give the Whittaker's five kingdom system of classification. 5
5. Answer any ten questions from the following :—
- (i) Who is the father of antiseptic surgery ? 1
- (ii) What is pasteurization ? 1
- (iii) Who isolated the first nitrogen fixing bacteria ? 1
- (iv) Give two examples of storage granules in bacteria. 1



- (v) What is the function of ribosome ? 1
- (vi) Why the cytoplasmic membrane is known as most vital membrane in bacteria ? 1
- (vii) Give the significance of dormancy. 1
- (viii) Give the name of any two endospore producing bacteria. 1
- (ix) What are myxospores ? 1
- (x) What is GC : AT ratio ? 1
- (xi) Give the significance of classification. 1
- (xii) What is meant by phylogenetic classification ? 1