

NKT/KS/17/5053

**Bachelor of Science (B.Sc.) Semester-I (C.B.S.) Examination**

**MICROBIOLOGY (History and Microbial Morphology)**

**Compulsory Paper—1**

Time : Three Hours]

[Maximum Marks : 50

**N.B. :**— (1) All questions are compulsory and carry equal marks.

(2) Draw diagrams and give examples wherever necessary.

1. Give contributions of Louis Pasteur. 10

**OR**

Describe the scope of Biotechnology and medical microbiology. 10

2. Describe the structure of cell wall of gram negative bacteria. 10

**OR**

What is plasmid ? Describe various types of plasmids. 10

3. (a) Differentiate between capsule and slim layer. Give chemical composition and significance of capsule. 5

(b) Give the structure of endospore and describe its germination process. 5

**OR**

(c) What are pili ? Give its types. 5

(d) Describe the structure of flagella of gram positive bacteria. 5

4. (a) Give the significance of bacterial taxonomy. 2½

(b) Describe intuitive method of classification. 2½

(c) How GC : AT ratio helps in modern classification ? 2½

(d) Give the role of DNA hybridization in bacterial classification. 2½

**OR**

(e) Describe 16S rRNA Cataloguing as a modern method of classification. 2½

(f) Describe Whittaker five Kingdom classification system. 2½

(g) Give salient features of Bergey's Manual ninth edition. 2½

(h) Describe numerical taxonomy. 2½

5. Solve any **ten** :

- (i) Who is the father of antiseptic surgery ?
- (ii) What is phycology ?
- (iii) What is exomicrobiology ?
- (iv) Give two functions of mesosomes.
- (v) What is nucleoid ?
- (vi) Enlist any two storage granule found in bacteria.
- (vii) What are myxospores ?
- (viii) Give any two significances of dormancy.
- (ix) What do you mean by lophotrichous bacteria ?
- (x) What is simple matching coefficient ?
- (xi) What is phylogeny ?
- (xii) What is domain with respect to bacterial classification ?

10×1