

Seat No. : _____

JH-102

June-2022

B.Sc., Sem.-II

103 : Microbiology

(Basic Bacteriology)

Time : 2 Hours]

[Max. Marks : 50

- Instructions :**
- (1) All Questions in Section – I carry equal marks.
 - (2) Attempt any **Three** questions in Section – I.
 - (3) Section – II is Compulsory.

Section – I

1. (A) Write a note on Bergey's manual of systematic bacteriology. 7
(B) Describe Whittaker's five kingdom system. 7
2. (A) Explain morphological features of bacteria. 7
(B) Describe in detail the stages in bacterial sporulation process. 7
3. (A) Explain arrangement and ultrastructure of bacterial flagella. 7
(B) Differentiate between the cell wall of gram-negative and gram-positive bacteria. 7
4. (A) Describe cellular reserve food material. 7
(B) Draw and describe: Ultra-structure of bacterial cell membrane. 7
5. (A) Enlist and explain growth characteristics of bacteria based on solid media. 7
(B) Describe nutritional types of bacteria based on their sources of energy. 7

6. (A) Explain various nutritional requirements of bacteria. 7
(B) Enlist various types of culture media and describe differential media. 7
7. (A) Describe moist heat and dry heat as agents for microbial control. 7
(B) Discuss the characteristics of an ideal antimicrobial chemical agents. 7
8. (A) Describe microbial control by osmotic pressure and filtration. 7
(B) Describe halogens and their application in controlling the microbial population. 7

Section – II

9. Answers the following in **1-2** lines : (Any **8**) 8
- (1) What is 16s rRNA ?
 - (2) Define : Species.
 - (3) Who developed the three-domain classification system ?
 - (4) What do you mean by binomial nomenclature system ?
 - (5) What is phototaxis ?
 - (6) Give the importance of prostheda.
 - (7) What is plasmid ?
 - (8) Give an example of capsulated bacterium.
 - (9) What is the source of nitrogen and carbon in nutrient agar medium ?
 - (10) Define 'Pellicle growth'.
 - (11) Give an example of selective medium.
 - (12) Give one difference between autotroph and phototroph.
 - (13) What is the mode of action of phenol ?
 - (14) What is thermal death time ?
 - (15) What is the full form of HEPA filter ?
 - (16) What is difference between sterilization and disinfection ?