

Bachelor of Science (B.Sc.)-I (CBCS Pattern) First Semester  
**MIC-01 - Microbiology Paper-I (Fundamentals of Microbiology)**

P. Pages : 2

Time : Three Hours



**GUG/W/18/11558**

Max. Marks : 50

Notes : 1. All questions are compulsory & carry equal marks.

1. Explain the contribution of following scientist to solve the controversy over spontaneous generation. **10**
- i) John Needham. ii) Lazzaro Spallanzani.  
iii) Louis Pasteur.

**OR**

- a) Discuss the contribution of Robert Koch in the field of Microbiology. **2½**
- b) Discuss the basic branches of Microbiology. **2½**
- c) Write about the scope of Medical Microbiology. **2½**
- d) Write the contribution of Elie Metchnikoff in the field of Microbiology. **2½**
2. Discuss the structure and function of fluid mosaic model of cytoplasmic membrane. **10**

**OR**

- a) Describe the structure and function of Flagella. **2½**
- b) Write a note on Gas vacuole. **2½**
- c) Write about conjugative and non-conjugative plasmids. **2½**
- d) Give diagrammatic representation of structure of peptidoglycan present in bacterial cell wall. **2½**
3. Discuss the various general criteria used for bacterial classification. **10**

**OR**

- a) Discuss Numerical Taxonomy method of bacterial classification. **2½**
- b) Write in short about Bergy's manual of determinative and systematic bacteriology. **2½**
- c) Write general characteristics of Monera and Protista. **2½**
- d) Write about DNA homology method of bacterial classification. **2½**
4. Discuss various methods of reproduction in molds and add note on economic importance of molds. **10**

**OR**

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|---|----|
| a) Discuss the steps involved in lysogenic cycle of $\lambda$ -phage.   | 2½ |
| b) Draw well labelled diagram of T <sub>4</sub> -bacteriophage.         | 2½ |
| c) Write about Animal inoculation method of cultivation of viruses.     | 2½ |
| d) Discuss the evolutionary and economic importance of Archaeobacteria. | 2½ |

**5. Attempt any ten.**

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|---|---|
| a) Write the contribution of Schroeder and Von Dusch. | 1 |
| b) Define Mycology?                                   | 1 |
| c) Define Industrial Microbiology.                    | 1 |
| d) Name two subunits of 70s Ribosome.                 | 1 |
| e) Give two examples of prokaryotic cell.             | 1 |
| f) Write two functions of bacterial capsule.          | 1 |
| g) Write two characteristics of Kingdom Animalia.     | 1 |
| h) Define Taxonomy.                                   | 1 |
| i) Define strain.                                     | 1 |
| j) What is prophage?                                  | 1 |
| k) Define Halophiles.                                 | 1 |
| l) Name any two methanogenic bacteria.                | 1 |

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