

M.Sc. (Final)  
Term End Examination, 2017-18

### Paper - III

*Time : Three Hours]                      [Maximum Marks : 100*  
*[Minimum Pass Marks : 36*

**Note** : Answer **all** questions. All questions carry equal marks.

1. Describe in detail the various laws of thermodynamics. Elaborate the concept of thermodynamics in living system.

***OR***

( 2 )

Describe in detail the various types of systems. Relate the concept of free energy with entropy and enthalpy.

**Unit-II**

2. Describe in detail the process of methanogenesis and explain its environmental consequences.

**OR**

Describe in detail  $C_3$  and  $C_4$  pathway along with their significance.

**Unit-III**

3. Describe in detail the Embden-Mayerhof pathway and its biological significance.

**OR**

Describe in detail the Homo and Heterolactic acid fermentation and its importance.

**Unit-IV**

4. Describe the process of Nitrogen fixation and its further cycling.

**OR**

Describe in detail the structure of endospore, its properties and germination.

**( 3 )**

**Unit-V**

5. Describe in detail the multicellular organisation in microbes.

***OR***

Describe in detail the microbial dormancy.

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