

Roll No. ....

Total Pages : 3

**MDE/M-24**

**4712**

## **MICROBIOLOGY AND BIOSTATISTICS**

Paper–BOT–201

Time Allowed : 3 Hours]

[Maximum Marks : 80

**Note** : Attempt **five** questions in all, selecting **one** question from each Unit. Question No. **1** is compulsory. All questions carry equal marks.

### **Compulsory Question**

1. Write short notes on the following : 8×2=16

- (a) TMV.
- (b) Microbial endosymbionts of Protozoa.
- (c) Bioremediation.
- (d) Disinfectants.
- (e) Psychrophilic and Thermophilic microorganisms.
- (f) Pasteurization.
- (g) Standard deviation.
- (h) Dilution plate method.

### **UNIT-I**

2. (a) Discuss the pathology of Citrus tristeza. 8
- (b) Give an account of methods used for isolation and purification of Viruses. 8

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3. Discuss salient features and Biological importance of Cyanobacteria. 16

### **UNIT-II**

4. Write short notes on the following :
- (a) Growth curve of Bacteria. 8
  - (b) Batch and Continuous culture. 8
5. Give a detailed account of Physical methods used for control of Microorganisms. 16

### **UNIT-III**

6. Give a detailed account of Synergism, Commensalism and Mutualism with special reference to Mycorrhizal Fungi. 16
7. Write short notes on any **two** of the following :
- (a) Microbiology of Ponds and Lakes. 8
  - (b) Biofilms. 8
  - (c) Bioleaching. 8

### **UNIT-IV**

8. Explain any **two** of the following briefly :
- (a) Graphical representation of data with suitable examples. 8
  - (b) Measures of central tendency with examples. 8
  - (c) Calculate mean and mode of following data : 8  
4, 3, 2, 5, 3, 4, 5, 1, 7, 3, 2, 1.

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9. (a) Calculate arithmetic mean and median of the following data : 8

Roll No.	1	2	3	4	5	6	7	8	9	10
Marks in statistics	67	69	66	68	72	63	76	65	70	74

- (b) In a cross between black and white coat coloured mice, the F<sub>2</sub> individual segregated into 787 black and 277 white coat coloured individuals. If you have to test that these results agree with the expected ratio 3:1. Then apply chi-square at P= 5%. ( $\chi^2_{cv}$  at 0.05, df 1 = 3.84). 5
- (c) Differentiate regression and correlation. 3