

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE  
SEMESTER END THEORY EXAMINATION

**B.Sc.(Hons.) Horticulture**

Semester	: II (New)	Term	: Second	Academic Year	: 2021-22
Course No.	: H/MIBO 121	Title	: Introductory Microbiology		
Credits	: 2 (1+1)				
Day & Date	: Friday, 16.09.2022	Time	: 9:00 to 11:00 hrs	Gold Marks	: 40

- Note :**
1. Solve ANY EIGHT questions from SECTION 'A'.
  2. All questions from SECTION 'B' are compulsory.
  3. All questions carry equal marks.
  4. Draw neat diagram wherever necessary.

**SECTION 'A'**

- Q.1 Enlist major groups of microorganisms and describe characteristics of bacteria and fungi.
- Q.2 a) Explain in detail various phases of bacterial growth with suitable diagram.  
b) Discuss the differences between prokaryotic and eukaryotic cells.
- Q.3 a) Explain in brief general properties of viruses.  
b) Discuss in brief steps involved in bacteriophage replication.
- Q.4 Enlist different methods of quantitative measurement of bacterial growth and explain in brief membrane-filter count and turbidimetric methods.
- Q.5 Enlist different types of biopesticides along with suitable examples.
- Q.6 Enlist the industrial uses of bacteria and describe in detail vinegar production.
- Q.7 How did each Scientist disprove spontaneous generation?
- Q.8 Write short notes on (Any Two):  
a) Different types of culture media  
b) Contributions of Robert Koch  
c) Advantages of biological control
- Q.9 Comment on importance and scope of microbiology in agriculture and allied fields.
- Q.10 Enlist various physical and chemical methods of sterilization and describe in detail sterilization by temperature.

**SECTION 'B'**

- Q.11 Do as directed:
- 1) Who developed the first compound microscope? (Answer in one sentence)
  - 2) Selective culture medium. (Define)
  - 3) Bright field microscopy. (Define)
  - 4) Bacteria that retain the crystal violet-iodine complex, when stained by Gram technique are called \_\_\_\_\_ bacteria. (Fill in the blank)
- Q.12 Define the following terms:
- 1) Disinfection
  - 2) Pure culture
  - 3) Tyndallization
  - 4) Bio-control

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