**ST JOSEPH’S UNIVERSITY, BENGALURU -27**

**M.Sc (MICROBIOLOGY) – II SEMESTER**

**SEMESTER EXAMINATION: APRIL 2023**

**(Examination conducted in May 2023)**

**MB DE 8521: AGRICULTURAL MICROBIOLOGY**

**(For current batch students only)**

**Time: 2 Hours Max Marks: 50**

**This paper contains 1 printed page and 4 parts**

**I. Answer any Five of the following 5X3=15**

1. Name the causal agents for the following:

 a. Tikka disease b. red rot of sugarcane c. sandal spike.

2. What are phytoalexins? Give their mode of action.

3. Name any three biopesticides.

4. List the significance of PSM’s.

5. Comment on the role of Mycorrhizae in Agriculture.

6. List the genetic methods adopted for crop improvement.

7. What is IPM?

1. **Answer any Two of the following 2X5=10**

8. Write short notes on: a. systemic fungicides b. Hypersensitivity in plants.

9. Explain the life cycle of the organism causing wheat rust.

10. How can mushrooms be cultivated in small-scale cultivation units?

**III. Answer any Two of the following 2X10=20**

11. a. How is mass production of *Rhizobium* done? **6m**

 b. Write notes on the Nitrogenase enzyme. **4m**

12. a. How do plants acquire resistance towards fungicides? **4m**

 b. What causes downy mildew of grapes? Describe the life cycle of the causative

 agent. **6m**

13. What role do enzymes and hormones play in pathogenesis?

1. **Answer the following 1X5=5**

14. The European Dark ages saw an inhumane process of bewitchment, which plant pathogen studied by you is considered a possible explanation. List the symptoms caused by this pathogen and highlight any positive applications of this pathogen.