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**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27**

**M.Sc MICROBIOLOGY- II SEMESTER**

**SEMESTER EXAMINATION: APRIL 2020.**

**MBDE 8518- AGRICULTURAL MICROBIOLOGY**

**Time: 2 ½ hrs Max Marks: 70**

**This question paper has 2 printed pages and 4 parts.**

**I. Answer any Five of the following**  **3x5 =15**

1. List and state the mode of action of three phytotoxins.
2. Illustrate the chemical reactions involved in ammonification and nitrification.
3. Name the causal organisms of the following:

a. Early blight of tomato b. Bacterial blight of rice c. Sandal spike

1. How are bio fertilizers applied to plants?
2. List the Strategies of IPM
3. *Phytophthora* is adapted to show variations in reproduction during cold and warm environmental conditions, what is this adaptation?
4. List the importance of PSM’s.

**II. Answer any Five of the following**  **5x5= 25**

1. List the types of Mycorrhizae and state its importance in horticulture.
2. Explain the life cycle of the Rust fungi.
3. Discuss spawn production.
4. List the different types of biopesticides and describe the production of any one.
5. Discuss the impact of acquired resistance to fungicides.
6. Write notes on hypersensitivity in plants.
7. Describe the disease caused by *Plasmopara viticola*.

**III. Answer any Two of the following questions** **10x2 =20**

 15. Write in detail the process of Biogas production.

 16.a. Discuss the application of antisense technology in delayed ripening. **6m**

 b. What is the mode of action of BT toxin? **4m**

 17. Discuss the process of nitrogen fixation by *Rhizobium.*

IV. Answer the following: **10x1 = 10**

18. A microbial infection is a dynamic process where the host and the pathogen are constantly trying to outdo each other to manifest a disease. Discuss the ways by which the pathogen tries to establish a disease and the ways by which the host tries to defend itself.