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Register Number:

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

**M.Sc MICROBIOLOGY- II SEMESTER**

**SEMESTER EXAMINATION- APRIL 2019.**

**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 questions: 5x3 =15**

1. What is IPM? List its importance.
2. Name the causal organisms of the following:

a. Wheat rust b. Damping off c. Red rot of Sugarcane

1. What is Ammonification?
2. List the symptoms associated with Citrus exocortis.
3. What is the significance of biological treatment of waste?
4. What is spawn? Give its importance.
5. Name any two Phytoalexins and their mode of action.

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

1. Write notes on isolation and significance of PSM’s.
2. How can shelf life of fruits and vegetables be improved? Explain with a suitable example.
3. Write notes on management of Insect pests by microorganisms.
4. Describe the production of *Azospirillum.*
5. Explain Acquired resistance to fungicides.
6. List the types and importance of Mycorrhizae in Agriculture.
7. Write notes on TMV.

**III. Answer any Two of the following questions: 2x10 =20**

 15. Explain the role of enzymes in pathogenesis.

 16. Explain the process of *Rhizobium* infection, colonization and nodule formation in

 leguminous plant. Add a note on the functions of Nitragenase enzyme.

 17.a.Explain the disease cycle of the organism causing Downy Mildew of Grapes.

 b. List the symptoms, disease cycle and control for Tikka disease of Groundnut.

**IV. Answer the following: 1x10 = 10**

18. The attack of a pathogen on a plant will trigger a series of host responses. Describe

 the role of chemical and necrotic changes in a plant that will check the progress

 of a pathogen.