

**SEMESTER EXAMINATION-2021**  
**CLASS – M.SC. III SEM SUBJECT- MICROBIOLOGY**  
**MMB-E304 AGRICULTURAL MICROBIOLOGY**

**Time: 3 hour**

**Max. Marks: 70**

**Min. Pass: 40%**

**Note:** Question Paper is divided into two sections: **A and B**. Attempt both the sections as per given instructions.

**SECTION-A (SHORT ANSWER TYPE QUESTIONS)**

**Instructions:** Answer any five questions in about 150 words each. Each question carries six marks. (5 X 6 = 30 Marks)

Question-1: What is soil fertility?

Question-2: Describe enzymatic activity of soil?

Question-3: What is the utility of *Pseudomonas* in agriculture?

Question-4: Microbes in composting.

Question-5: Microbial transformation of carbon.

Question-6: Nitrification and denitrification.

Question-7: Difference between Biofertilizers and Chemical Fertilizers.

Question-8: Microbial agent for control of plant disease.

Question-9: Biocontrol of nematodes.

Question-10: Toxin production in *Bacillus thuringiensis*.

**SECTION-B (LONG ANSWER TYPE QUESTIONS)**

**Instructions:** Answer any FOUR questions in detail. Each question carries 10 marks. (4 X 10 = 40 Marks)

Question-11: Describe biological nitrogen fixation.

Question-12: Explain in detail the production of microbial insecticides.

Question-13: Give physico-chemical properties of soil and factors affecting soil properties

Question-14: What are biofertilizers? Describe the need and role of algal biofertilizers.

Question-15: Explain in detail the type and role of mycorrhizae in agriculture.

Question-16: Describe in detail positive interactions among microorganisms.

Question-17: Give detail account of microflora of rhizosphere and phyllosphere.

Question-18: Isolation, purification and mass production of phosphate solubilizer.

**Paper Code: MMB E304**