



The Assam Royal Global University, Guwahati

Royal School of Biosciences
M.Sc^{3rd} Semester, Microbiology
Semester End Examination, Jan 2023
Course Title: Agriculture Microbiology
Course Code: MIB154D302

Time: 3 Hours

Maximum Marks: 70

Note: Attempt all questions as per instructions given.

The figures in the right-hand margin indicate marks.

Section – A

1. Attempt **all** questions. (Maximum word limit 50) 2 x 8
- What do you mean by agroecosystem?
 - Mention the steps of nodulation process by *Rhizobium*.
 - Differentiate between mineralization and immobilization.
 - What is humus?
 - What is the significance of mycorrhizae?
 - Give two examples of PGPRs.
 - Give an account on biodegradation.
 - Give an account on GMOs.

Section – B

2. Attempt **any one** of the following: 12 x 1
- Elaborate on biological nitrogen fixation.
 - Describe the role of micro-organism in soil health.
3. Attempt **any two** of the following: 7 x 2
- Write short notes on Biofertilizers.
 - Write on organic matter decomposition.
 - Describe sulfur cycle.
4. Attempt **any two** of the following: 7 x 2
- Give a general account on toxin producing microbes.
 - Elaborate on Bioindicators.
 - Describe the measurement of microbial activity in environmental samples.
5. Attempt **any two** of the following: 7 x 2
- Elaborate on Bioremediation.
 - Briefly explain about microorganisms and metal pollutants.
 - Elaborate on biodiesel crops.