

U.G. 5th Semester Examination - 2021**MICROBIOLOGY****[HONOURS]****Course Code : MB-H-CC-L-12****(Microbial Ecology and Agricultural Microbiology)**

Full Marks : 40

Time : $2\frac{1}{2}$ Hours*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any **five** of the following : $2 \times 5 = 10$
- i) Define biosphere.
 - ii) What is biofilm?
 - iii) Define amensalism and predation.
 - iv) What is biofertilizer?
 - v) Name two microorganisms used in crop protection.
 - vi) What is habitat?
 - vii) What is niche?
 - viii) What are diversity indices?

2. Answer any **two** of the following: $5 \times 2 = 10$
- i) Differentiate between microbial ecology and macroecology.
 - ii) Write the characteristics and applications of plant growth promoting rhizobacteria. $2\frac{1}{2} + 2\frac{1}{2}$
 - iii) Compare the microflora of rhizosphere and rhizoplane. 5
 - iv) Describe one chemical and one biological method for control of plant pathogens. $2\frac{1}{2} + 2\frac{1}{2}$
3. Answer any **two** of the following: $10 \times 2 = 20$
- i) Briefly describe the stable isotope probing method for the measurement of microbial metabolism. Briefly describe the r and k strategies. 5+5
 - ii) Describe the structure and function of various Mycorrhizal fungi. 5+5
 - iii) Write the name of the causative agents and control mechanism of bacterial wilt and rust of wheat. 4+6

iv) Write short notes on:

$2\frac{1}{2} \times 4$

- a) Metagenomics
- b) CaMV
- c) PR-protein
- d) Phyloplane
