

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- FEB-2023

M.Sc -4th Sem (Microbiology)

COURSE CODE(CREDITS):21MS1MB412

MAX. MARKS: 15

COURSE NAME: Plant &Agricultural Microbiology

COURSE INSTRUCTORS: Dr Hemant Sood

MAX. TIME: 1 Hour

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

- Q1. How you can classify plant and microbial interactions? Which relationship is the most promising for agricultural improvement and how? (3)
- Q2. The RI gene is responsible for the red color of the rose. How you would transfer this gene into strawberry by using Ti plasmid? Develop a protocol for the development of transgenic strawberries. (3)
- Q3. Why microbiological and biotechnological interventions are required in Agricultural sciences? Mention any products developed out of these for crop improvement. (2.5)
- Q4. How nitrogen fixation is carried out by microbes in black grams? Explain the role of Nod factors and Nif genes for the same and how it affects the nitrogenase activity. (4)
- Q5. Which is the most effective and rapid methodology for transferring the gene of interest for terpenoid production from *Picrorhiza* sp. to *E.coli* host cell? Explain the methodology of transformation and selection of transformed bacterial cell. (2.5)