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**SECOND YEAR (B.Sc.)**  
**MIC24102: Agricultural Microbiology**  
**(Semester IV)**

**Program:** BScGen03  
**Program Specific:** Microbiology  
**Course Type:** Disciplinary Major Mandatory  
**Paper: II**

**Credits:** 2  
**Time:** 2 Hours  
**Max. Marks:** 30  
**SET:** A

**Instructions to the candidate:**

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.
- 3) Draw a well labelled diagram wherever necessary.

**Q1) Answer the following**

[5 X 1 = 5]

- a) Explain transgenic crops.
- b) Cite any two symptoms of Downy mildew disease.
- c) Define polycyclic disease.
- d) Give two examples of edible vaccines.
- e) What are micronutrients?

**Q2) Answer any FIVE of the following.**

[5 X 2 = 10]

- a) Summarize the control measures used to avoid Citrus canker disease.
- b) Assess the potential biotechnological applications of plant biofilms.
- c) Mention the advantages of edible vaccines.
- d) Sketch the stages in development of a plant disease cycle.
- e) Describe any one technique used in eradication of plant disease.
- f) Enlist the mechanisms used by microorganisms to make iron available to plants.
- g) Cite the applications of GM crops.

**Q3) Answer any TWO of the following.**

[2 X 5 = 10]

- a) Extend your views on the benefits of biological control over chemical control.
- b) Describe dissemination stage in plant disease development.
- c) Summarize symbiotic nitrogen fixation in leguminous plants.
- d) Illustrate the *Agrobacterium* mediated transformation with the help of flowchart.

**Q4) Answer any ONE of the following.**

[1 X 5 = 5]

- a) Describe an IPM strategy for managing pest outbreaks in an agricultural field.
- b) Discuss how do Bt crops contribute to insect resistance in plants.

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