

**Microbiology [Honours]
[CBCS]**

B.Sc. Fifth Semester End Examination-2023

(Regular & Supplementary Paper)

PAPER-DSE2T

Microbes in sustainable Agriculture and development

Full Marks: 40

Time: 02 Hrs

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

Group A

- 1. Answer any FIVE questions of the following: 5x2= 10**
- a. What is biotech feed and Silage? 1+1
 - b. Give example of two nodulating bacteria remain in symbiosis with legume plant. 2
 - c. Write down the name of microorganismsa involved in cellulose and lignin degradation. 1+1
 - d. What is Frankia? Mention its importance. 1+1
 - e. Differentiate Green manure and Biomanure. 2
 - f. Write the importance of mycorrhizae for plants.
 - g. Write the characteristics feature of Azospirillum sp.
 - h. Define Humifaction.

(2)

Group B

2. Answer any FOUR questions of the following: $4 \times 5 = 20$
- a. Briefly describe about PGPRs and their importance. 5
 - b. What is biofuel? State its merits and demerits. $1+2+2$
 - c. Write the role of microbes to production and control of green house gases. 5
 - d. What is weeds? How weeds are control by microorganism. $1+4$
 - e. Write the social and environmental aspects of GMO. 5
 - f. Briefly describe the soil profile with diagram. 5

Group C

3. Answer any ONE question of the following: $1 \times 10 = 10$
- a. What is Mineralization? Describe about the humus formation with its application. Write down the mechanism of mineralization of potassium by microbes. $2+4+4$
 - b. What is transgenic animal? Write the mechanism to formation of golden rice. Briefly describe the suitable processes to transfer the recombinant vector into the plant and animal. $1+3+6$
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