

U.G. 3rd Semester Examination - 2021**Molecular Biology****[PROGRAMME]****Skill Enhancement Course (SEC)****Course Code : MB-G-SEC-1-101-T****(Biofertilizers)****[For Sripat Singh College]**

Full Marks : 40

Time : 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 : $2 \times 5 = 10$
- State the role of *Azospirillum* as biofertilizer.
 - Write two important applications of vermicompost.
 - What is Mycorrhizal association?
 - What are the probable crop responses to *Azotobacter* inoculum?
 - What are carrier-based inoculants?
 - How will you produce green manure?
 - What is Actinorrhizal symbiosis?
 - Explain the role of VAM with respect to phosphate nutrition of the soil.

2. Answer any **two** of the following: $5 \times 2 = 10$
- What are the steps involved in production of vermicompost?
 - State the role of potassium- and phosphate-solubilising bacteria as biofertilizer.
 - Mention the steps involved in production of VAM inoculum by pot culture.
 - Describe the prospects and consequence of organic farming.
3. Answer any **two** of the following: $10 \times 2 = 20$
- Explain the significance of Cyanobacteria as biofertilizer. What is *Anabaena azollae* association? What is the role of *Anabaena azollae* in rice cultivation? $5 + 2\frac{1}{2} + 2\frac{1}{2}$
 - How will you isolate nitrogen-fixing bacteria from the soil and check its ability of nitrogen fixation. Discuss the role of *Rhizobium* as biofertilizer. $6 + 4$
 - What are the processes involved in recycling of biodegradable municipal and agricultural wastes? Explain the methods involved in making biocompost. $5 + 5$
 - State the advantages of biofertilizers over chemical fertilizers with respect to soil nutrition. What are PGPR? Explain the role of PGPR in plant growth. $4 + 2 + 4$

[Turn over]