

U.G. 3rd Semester Examination - 2020

Molecular Biology

[PROGRAMME]

Skill Enhancement Course (SEC)

Course Code : MB-G-SEC-T-1-101

(Biofertilizers)

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

2. Answer any **two** of the following: 5×2=10
- 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.
 - What are the steps involved in production of vermicompost?
3. Answer any **two** of the following: 10×2=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 $\frac{1}{2}$
 - 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
 - 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