

[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 2139 **GC-3** **Your Roll No.....**

Unique Paper Code : 32533935

Name of the Paper : Microbial Biofertilizer and Biopesticides

Name of the Course : **B.Sc. (H) Microbiology – Skill Enhancement Course**

Semester : III CBCS

Duration : 2 Hours

Maximum Marks : 50

Instructions for Candidates

1. Write your Roll No. on the top immediately on the receipt of this question paper.
2. Attempt any **five** questions.
3. **All** questions carry equal marks.

1. (a) Discuss the advantages and disadvantages of using biofertilizers over chemical fertilizers. (5)
- (b) Give examples of the following : (1×5=5)
 - (i) Free living N₂ fixing biofertilizer
 - (ii) PGPR
 - (iii) VAM fungi
 - (iv) Actinorrhizal biofertilizer
 - (v) Associative symbiotic biofertilizer
2. (a) What are carrier-based inoculants ? Briefly discuss the properties of an ideal carrier material. (3)
- (b) What are the conditions required for getting biofertilizers certified with ISI mark ? (3)

P.T.O.

- (c) If you are in Madhya Pradesh and peat is very expensive carrier material, what alternative carrier material you will use for preparing carrier based inoculant ? (4)
3. (a) What do you understand by the shelf life of carrier based biofertilizer ? Briefly explain the factors affecting shelf life of the inoculant. (4)
- (b) How will you select efficient VAM fungi ? List out the steps involved in production of VAM inoculum by pot culture ? (6)
4. (a) What is algalization ? Briefly explain which algae is used as biofertilizer. Is it a pure culture ? How mass production of algae is done ? (6)
- (b) What is blending and curing ? Explain giving examples. (4)
5. (a) How will you apply the biofertilizer Rhizobium to plants ? (4)
- (b) What is the significance of lime pelleting ? Explain the method briefly. (4)
- (c) How is packaging of biofertilizer done for commercial purpose ? (2)
6. (a) What do you understand by ideal fertile soil ? (2)
- (b) What is dual inoculation ? Give examples. (3)
- (c) What are the advantages of using biopesticide over chemical insecticide ? Give examples of one bacterial and one viral biopesticide. (3)
- (d) How will you isolate Azospirillum in a microbiology laboratory ? (2)