

2021

BOTANY — HONOURS

Paper : SEC-A-2

(Biofertilizer)

Full Marks : 80

The figures in the margin indicate full marks.

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

1. Answer **any ten** in brief : 2×10
- (a) Name one filamentous non-heterocystous and one unicellular nitrogen-fixing cyanobacteria.
 - (b) What is VAM?
 - (c) What is eutrophication?
 - (d) What are bacteroids? When are they produced?
 - (e) Mention the scientific name of one associative endosymbiont of plant and name the plant.
 - (f) What is organic farming?
 - (g) Name two advantages of a biofertilizer.
 - (h) State the gram nature and morphology of *Rhizobium*.
 - (i) What is Monotropoid mycorrhiza?
 - (j) Name two important properties of an ideal carrier material of *Rhizobium*.
 - (k) Distinguish between biocompost and vermicompost.
 - (l) What is algalization?
 - (m) What is starter culture?
 - (n) What do you mean by YEM medium?
 - (o) What is bio-gas slurry?
2. Answer **any four** in brief : 5×4
- (a) Write short note on application of *Azolla* in rice cultivation.
 - (b) Write short note on isolation of *Rhizobium*.
 - (c) What is green manuring? Write some advantages and disadvantages of the process.
 - (d) Write short note on commercial compost production methods.
 - (e) Write short note on recycling of biodegradable municipal waste.
 - (f) Distinguish between ectomycorrhiza and endomycorrhizal association.

Please Turn Over

3. Answer **any four** questions :

- (a) Mention the systematic position of the genus *Azotobacter*. Write down the characteristic features of the genus. Describe the mass multiplication and maintenance of *Azotobacter*.
2+2+4+2
- (b) What is mycorrhiza? Write a short note on the different types of mycorrhizal association. Briefly describe the mass production of VAM inoculum and its influence on growth and yield of crop plants.
2+3+3+2
- (c) What do you mean by actinorhizal symbioses? Briefly describe the infection process and nodule formation in an actinorhizal species by *Frankia*. Provide a list of different types of actinorhizal angiospermic genera. Write down the isolation process of *Frankia*. 2+3+2+3
- (d) What is *Azolla*? Write about *Azolla-Anabaena azollae* association. 2+8
- (e) Write a note on biodegradation of agricultural wastes. Name the organisms involved in the process. 7+3
- (f) What is the importance of vermicomposting? Write down the names of different types of earthworms used for vermicomposting. Mention their scientific names and brief characteristic features. 5+(2½+2½)
-