

June : 2026

BOTANY

Paper: SEC-BOT-201

BIOFERTILIZERS

Time: 2 Hours

Total Mark: 45

(The figures in the right margin indicate full marks of the questions)

1. Answer the following questions as directed: $1 \times 8 = 8$
- a) The cyanobacterial structure responsible for nitrogen fixation is _____ (Fill in the blanks).
 - b) The scientific name for the Indian Blue earthworm used in vermicomposting is _____ (Fill in the blanks).
 - c) Anabaena remains in symbiotic association with roots of _____ (Fill in the blanks).
 - d) Phosphate solubilizers are responsible for conversion of mineral phosphate to _____ (Fill in the blanks).
 - e) Ectomycorrhiza form _____ around the roots of plants (Fill in the blanks).
 - f) *Azolla* is a bryophyte/pteridophyte/algae/angiosperm (Choose the correct answer).
 - g) Plastic/organic waste/chemical waste/metal waste can be converted to compost (Choose the correct answer).
 - h) Example of a chemical fertilizers is NPK/bacteria/fungi/ *Azolla*

2. Write Short Notes on (Any three):

4×3 = 12

- a) Difference between Manure and Compost.
- b) Role of Vermicomposting in Sustainable agriculture management.
- c) Phosphate solubilization by bacteria.
- d) Cyanobacteria.

3. What is nitrogen fixation? Describe in details the process of nitrogen fixation by bacteria. Mention two nitrogen fixing bacteria present in the rhizosphere?

2 + 6 + 2 = 10

Or

What are phosphate solubilizers and potassium mobilizers? Write about their uses in agriculture.

4 + 3 + 3 = 10

4. What is Vermicomposting? Describe the procedure of Vermicomposting. Write briefly the method of harvesting vermicompost.

1 + 6 + 3 = 10

Or

Define Mycorrhiza. Differentiate between endomycorrhiza and ectomycorrhiza. Explain the role of mycorrhiza in crop improvement.

2+4+4 = 10

5. Write explanatory notes on (any one):

5 × 1 = 5

- a) Recycling of biodegradable waste.
- b) Biological nitrogen fixers.
