

B.Sc. (Honours) Examination, 2018

Semester – VI

Botany

BBE – 63 (Elective)

(Biofertilizers and Biopesticides)

Time: Three Hours

Full Marks: 40

Questions are of value as indicated in the margin

Answer question **No. 1** and **any four** from the rest

1. Answer **any eight** of the following: 1×8=8
 - (a) Name two predaceous fungi.
 - (b) Name two non-heterocystous N₂ fixing cyanobacteria.
 - (c) Which metal co-factor can replace molybdenum in classical type of nitrogenase?
 - (d) What is effector triggered immunity?
 - (e) How do *Rhizobium* colonies differ from *Agrobacterium* colonies when they grow on YEMA medium?
 - (f) Name two natural sources of potassium.
 - (g) State the characteristic morphological features of the genus *Azotobacter*.
 - (h) What is siderophore?
 - (i) Name one epizoic earthworm species commonly used in vermicomposting.
 - (j) Name two molecules where triple bonds are found.
 - (k) Name two bacterial biocontrol agents.
 - (l) What is NOD factor?
 2. State the role phosphorus in different biological processes. What are phosphate solubilizing microorganisms? State the possible mechanism of phosphate solubilization by them. 3+2+3=8
 3. Describe the isolation protocol of a bacterial biocontrol organism against fungal pathogens following dual culture overlay assay method. What parameters are to be considered prior to making its suitable formulation? 4+4=8
 4. Write notes on: 4+4=8
 - (a) Green manure
 - (b) 'Nif-gene cluster' in *Klebsiella pneumoniae*
 5. What is Bt-toxin? How can it help in generating insect resistant plants? State two drawbacks of Bt crops. 2+4+2=8
 6. Define biological control. Describe the role of PGP organisms in control of plant pathogens. 2+6=8
 7. Write notes on: 4+4=8
 - (a) Hyperparasites
 - (b) Vermicomposting
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