

KATHMANDU UNIVERSITY
End Semester Examination
July/August, 2019

Level : B.Tech.
Year : IV
Time : 2 hrs. 30 mins.

Course : BIOT 407
Semester: II
F.M. : 55

SECTION "D"

(Long answer questions)

[3Q × 7 = 21 marks]

1. Define abiotic stress? Explain the molecular genetics of abiotic stress in crops giving suitable examples.
2. What are transgenic crops? Describe the transgenic plants with viral resistance.
3. Explain the nodulin developing process in legumes. Describe in detail the application of genetic engineering for nodulation gene cloning in bacterial system.

SECTION "E"

(Short answer questions)

4. Write short notes on: [6Q × 4 = 24 marks]
 - a. Genetic use restriction technologies
 - b. Entomopathogenic fungus
 - c. Ribosomal inactivating protein
 - d. Integrated Pest Management
 - e. Plant growth promoting rhizobacteria
 - f. Haploid production in crop improvement
5. Give *TWO* major differences between: [2Q × 2 = 4 marks]
 - a. Ectomycorrhiza and endomycorrhiza
 - b. Determinate and indeterminate nodules
6. Explain why/how for the following: [3Q × 2 = 6 marks]
 - a. During episodes of heat stress, GABA accumulates to levels six to ten-fold higher than unstressed plants.
 - b. Stress- induced alkalization of the apoplast favors formation of the dissociated form of abscisic acid.
 - c. Leghaemoglobin responsible for anaerobic condition in root nodules of *Rhizobium* for optimum activity of nitrogenase.

