TDC Even Semester Exam., 2019

BOTANY

(Honours)

(6th Semester)

Course No. : BOTH–601

(Plant Breeding, Molecular Biology and Biotechnology)

Full Marks : 35
Pass Marks : 12

Time : 2 hours

The figures in the margin indicate full marks for the questions

Answer **five** questions, taking **one** from each Unit

UNIT—I

1. *(a)* What do you mean by vegetative reproduction? With schematic diagram, briefly describe different methods of vegetative reproduction in plants. 1+4=5

(b) Differentiate between stock and scion. 2

2. *(a)* What do you mean by plant introduction? Briefly discuss the process of plant introduction. 1+4=5

(b) Differentiate between heterosis and inbreeding depression. 2

UNIT—II

3. *(a)* Define Cistron, Recon and Muton. 3

(b) With suitable theories, briefly describe the fine structure of gene. 4

4. Write notes on the following : 3½+3½=7

(a) Inducible operon

(b) Post-transcriptional modification of mRNA

UNIT—III

5. *(a)* What do you mean by restriction endonucleases? Write the functions of the following :

(i) EcoRI

(ii) HindIII 1+1½+1½=4

(b) Add a note on c-DNA libraries. 3

6. *(a)* What do you mean by polymerase chain reaction? With schematic diagram, describe different steps of polymerase chain reaction. 1+4=5

(b) Differentiate between plasmid and cosmid. 2

UNIT—IV

7. *(a)* What is somatic hybridization? With suitable diagram, discuss different steps of somatic hybridization. 1+4=5

(b) How are protoplasts fused during culture? 2

8. *(a)* Discuss different methods of gene delivery during production of genetically engineered plant. 4

(b) Write about the importance of markers in plant genetic engineering process. 3

UNIT—V

9. *(a)* Discuss salient achievements in the field of crop biotechnology in India. 3

(b) Write about the applications of transgenic plants. 4

10. Write notes on the following : 3½+3½=7

(a) Enzyme immobilization

(b) Biogas production

★ ★ ★