2018

PG Even Semester (CBCS) Exam., May—2018

BIOTECHNOLOGY

(4th Semester)

Course No. : BTYCC–402

(Plant Biotechnology, Animal Biotechnology and Applications of Genetic Engineering)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **all** questions

1. *(a)* What is somoclonal variation?

(b) Discuss the factors responsible for somoclonal variation.

(c) Write a note on applications of somoclonal variation in plant improvement. 2+8+4=14

OR

2. *(a)* Discuss the technique of developing a flood tolerant genotype of plant using plant tissue culture.

(b) Write a note on haploid production and its applications. 8+6=14

3. *(a)* Describe how you will design Ti plasmid for transferring a gene of interest.

(b) Write the importance of Ti plasmid in rDNA technology. 10+4=14

OR

4. *(a)* Write the procedure of developing a pest tolerant plant with specific examples.

(b) Add a note on reporter gene and its importance in development of disease-resistant plants. 10+4=14

5. *(a)* Define QTL.

(b) Discuss different methods of QTL mapping.

(c) Explain the procedure of QTL mapping. 2+4+8=14

OR

6. *(a)* Write a note on economic trait related gene.

(b) Discuss the techniques for molecular identification of a species. 6+8=14

7. *(a)* Explain the gene-for-gene model.

(b) Based on the model, discuss any two strategies for the development of transgenic plants with enhanced tolerance/resistance to pests. 4+10=14

OR

8. *(a)* Define the terms 'therapeutics' and 'vaccines'.

(b) Discuss how gene therapy works citing suitable examples. 4+10=14

9. *(a)* Write a note on human genome.

(b) Discuss the salient features of gene annotation technology. 8+6=14

OR

10. *(a)* Describe various modes of IPR protection.

(b) Write a note on the demerits of IPR with special reference to patents. 8+6=14

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