PG Even Semester (CBCS) Exam., May—2017

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

1. What is somaclonal variation? Discuss the techniques for production of disease resistant and stress tolerant plant varieties using plant cell culture. 4+10=14

OR

2. What is anther culture? Describe the technique of producing haploid plants using anther culture. Discuss the utility of haploids in plant research. 4+5+5=14

3. Describe the methods of modification of Ti plasmid as binary and cointegrative vectors. Highlight its advantages and disadvantages. 10+4=14

OR

4. What do you mean by biotic and abiotic stress in plants? Write the process of production of insect, bacteria and virus resistant plants. Discuss the threats involved in development of stress resistant plants. 2+10+2=14

5. Discuss the genetic basis of polygenic traits. Write a note on different methods of QTL mapping. Describe the applications of QTL mapping in crop improvement. 2+8+4=14

OR

6. What are SNPs? Discuss the techniques of SNP genotyping and its selection for crop breeding. Write the applications of SNPs for molecular breeding in plants. 2+8+4=14

7. Define the terms 'Human therapeutics' and 'Gene therapy'. Discuss the advantages and disadvantages of vectors used in gene therapy. 4+10=14

OR

8. Define organic farming. Describe the characteristics and benefits of an organic farming system. 4+10=14

9. What is IPR? Discuss various modes of IPR protection for biotechnological inventions. Discuss the demerits of IPR. 2+8+4=14

OR

10. What do you mean by coding sequences of human genome? Discuss the characteristics of human genome. 4+10=14

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