PG Odd Semester (CBCS) Exam., December—2016

LIFE SCIENCE AND BIOINFORMATICS

(1st Semester)

Course No. : LSBCC–101

(Genetics and Molecular Biology)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. *(a)* What is the principle of independent assortment related to meiosis? 7

(b) Write on a testcross for two loci that determines leaf type and plant height. 7

OR

2. *(a)* How can frequency of recombinant gamates be half (50%) of the crossing-over frequency? 7

(b) Explain a three-point testcross that can be used to map linked genes. 7

3. Write notes on : 7×2=14

(a) Pedigree analysis

(b) Mapping of genes by interrupted mating in bacteria

OR

4. Write a note on the process of bacterial transformation. 14

5. Write a note on double-helical structure of DNA. 14

OR

6. Write notes on : 7×2=14

(a) DNA polymerase

(b) Genetic code and preparation of genetic code dictionary

7. Write a note on the process of transcription with a special emphasis on RNA polymerase and termination. 14

OR

8. What is RNA processing? Write a note on mechanism of splicing with a special note on alternative splicing. 2+12=14

9. Explain the role of oncogenes and tumor suppressor genes in the development of cancer. Explain why the mutation in tumor suppressive genes is recessive. 5+5+4=14

OR

10. Write short notes on : 7×2=14

(a) Bioethics

(b) Apoptosis

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