2018

BOTANY

(Major)

Paper : 6.2

(Bioinformatics, Computer Application and Biotechnology)

Full Marks : 60

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Fill in the blanks with appropriate word(s) : 1×7=7

(a) Google Chrome is a/an _____.

(b) The full form of HTML is _____.

(c) If a computer provides database services to other, then it will be known as _____.

(d) On a double-stranded DNA, if reading 5′ to 3′ on one strand matches the sequence reading 5′ to 3′ on the complementary strand, such sequence is called as _____.

(e) ____ codes are used to represent alphanumeric data in computer.

(f) The full form of 'EMBL' database is ____.

(g) FTP stands for ____.

2. Define the following : 2×4=8

(a) Homology search

(b) Central dogma of life

(c) Ti plasmid

(d) Proteomics

3. Write briefly on any *three* of following : 5×3=15

(a) Programming languages used in bioinformatics

(b) Somaclonal variations

(c) Principle of Maxam-Gilbert DNA sequencing

(d) DNA library

(e) Embryo rescue in tissue culture

4. Answer any *three* of the following : 10×3=30

(a) Describe an example of successful drug designing with the help of bioinformatics. 10

(b) Explain the methods of tissue sterilization and culture techniques followed in tissue culture. 10

(c) Define DNA fingerprinting. Explain how it can be applied in different fields of modern biology. 3+7=10

(d) Describe the process of obtaining a transgenic plant through genetic engineering. 10

(e) Define restriction enzyme. "Isolated restriction enzymes are used to manipulate DNA for different scientific applications." Discuss. 2+8=10

(f) Classify different types of computers. Make a comparison between modern computer and old-days computer. 5+5=10

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