

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 \_\_\_\_\_.

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(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 :  $10 \times 3 = 30$

- (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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