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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. Answer the following as directed : 1×7=7

(a) The aspect of bioinformatics that can be applied to drug designing is known as —.

(Fill in the blank)

(b) What is PHYLIP?

(c) — is the study of location, structure and function of entire protein content of a cell or a body.

(Fill in the blank)

(d) What does the acronym 'MOUSE' stand for?

- (e) Who created the 'Hypertext Markup Language', i.e. HTML?
- (f) Who introduced the technique of tissue culture?
- (g) What is the MS medium?
2. Write short notes on any *four* of the following : $2 \times 4 = 8$
- (a) Restriction Enzymes
- (b) Biological Databases
- (c) Operating System(OS)
- (d) Totipotency
- (e) GM Crops
- (f) Binary Number System
3. Answer any *three* of the following : $5 \times 3 = 15$
- (a) Differentiate between RAM and ROM.
- (b) Write the use of genetic engineering in agriculture.
- (c) Write briefly about the blast algorithm.
- (d) What is SWISS-PROT protein sequence database? How is it used?
- (e) Discuss about the applications of a bar-code reader.
- (f) Write a note on DNA fingerprinting.

4. (a) What role does bioinformatics play in drug discovery and designing? Discuss. 10

Or

What are input devices? Write about the different input devices of a computer.

2+8=10

- (b) Define 'genomics'. Write a note on functional genomics and its component parts dealing with gene and protein expression and metabolism. 1+9=10

Or

Write short notes on the following :

5+5=10

- (i) Production of haploid plants by anther and microspore culture
(ii) Somaclonal variation
- (c) (i) Discuss about the scope and significance of plant biotechnology. 7
(ii) Write a note on DNA library. 3

Or

"Life without the Internet has become unimaginable." Discuss and justify the statement in the present-day context. 10

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