2016

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 : 2×4=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 : 5×3=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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