

D 6825

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Name.....

Reg. No.....

## THIRD SEMESTER M.Sc. DEGREE EXAMINATION, DECEMBER 2016

(CUCSS)

Botany

## BO 03 CT 11—BIOTECHNOLOGY AND BIOINFORMATICS

Time : Three Hours

Maximum : 36 Weightage

I. Answer *all* the fourteen questions very briefly :

- 1 How can you obtain virus-free sugarcane plants from virus-infected plants ? Are these plants virus-resistant ? Why or why not ?
- 2 What is nick translation ? With what aim does a biotechnologist nick translate DNA ?
- 3 What is RT PCR ?
- 4 What is a reporter gene ?
- 5 What are Chaperons ?
- 6 Explain the importance of somatic mutations.
- 7 What is the HAC ?
- 8 What is SWISSPROT ?
- 9 What is E-governance ?
- 10 What is the role of PVP in culture medium ?
- 11 What is geotagging ?
- 12 What are VNTRs ?
- 13 Explain major alignment tools.
- 14 What are cybrids ?

(14 × 1 = 14 weightage)

II. Answer any *seven* questions in not more than 100 words :

- 15 Write a note on intellectual property rights in relation to Biotechnology research.
- 16 Describe commonly used molecular markers.
- 17 If all somatic cells of an organism have all the genes why all cells are not totipotent ?
- 18 What are shine dalgarno sequences ?
- 19 What is the significance of cDNA library ?
- 20 What are the advantages and disadvantages of electroporation ?
- 21 Write a note on embryo rescue.

Turn over

- 22 Explain the steps involved in cell line selection from a cell suspension culture.
- 23 Explain Fluorescent in situ hybridization.
- 24 Explain the role of vitamins in a plant tissue culture medium ? List out the commonly used vitamins.

(7 × 2 = 14 weightage)

III. Answer any *two* questions in 300 words :

- 25 Discuss the ethical issues raised against the GM crops.
- 26 Explain bioinformatic tools employed in DNA sequencing. Comment on sequencing automation.
- 27 What is cell line selection ? Explain the protocol with a suitable example. Comment on its advantages and limitations.
- 28 What are edible vaccines ? Explain the steps involved in detail.

(2 × 4 = 8 weightage)