D 6825 (Pages : 2) 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 x 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 x 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 x 4 = 8 weightage)