D 91704 (Pages 2) Name.....

Reg. No.....

THIRD SEMESTER M.Sc. DEGREE EXAMINATION, DECEMBER 2015

(CUCSS)

Botany

BO 03 CT 11—BIOTECHNOLOGY AND BIOINFORMATICS

(2010 Admissions)

Time : Three Hours Maximum : 36 Weightage

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

1 What is the importance of endosperm culture in plant tissue culture ?

2 What are DNA chips ?

3 Mention the importance of RT-PCR in genetic engineering.

4 What are polyhydroxy alkanoates ?

5 Enlist the preference for YAC in cloning experiments.

6 What is a chimeric DNA ?

7 Give *two* examples of structure classification databases.

8 Explain the relevance of Open Archive Initiative.

9 Mention the importance of RasMol in protein studies.

10 Expand TIGR.

11 What is pUC8 ?

12 What are synthetic seeds ?

13 Explain HTML.

14 What are secondary databases ? Give *two* examples.

(14 x 1 = 14 weightage)

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

15 Explain gene cloning in plants emphasising on a transgenic plant.

16 Write a note on the major vectors used in recombinant DNA technology.

17 Explain the methods of screening of gene in DNA libraries.

18 What are nucleases ? Elucidate the different types of restriction endonucleases with examples.

19 Explain secondary metabolite production using bioreactors.

20 Write a note on nucleic acid databases.

21 Explain automated DNA sequencing.

Turn over

22 What is cryopreservation ? Explain its role in germplasm conservation,

23 Write a note on the social issues generated by recent developments in biotechnology.

24 Explain southern blotting enlisting its applications.

(7 x 2 = 14 weightage)

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

25 Explain the types of organ culture employed in plant tissue culture experiments with special reference to their applications.

26 Discuss the steps involved in the construction of a c-DNA library.

27 Describe sequence database searching with emphasis on Multiple sequence alignment technique: and the databases used for the process.

28 Explain the scope and achievements of genetic engineering in plants with examples.

(2 x 4 = 8 weightage)