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 × 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 × 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 × 4 = 8 weightage)