

C 82380

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Name.....

Reg. No. **21**

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2015

(CUCSS)

Botany

B004 ET 14—GENETIC ENGINEERING

Time : Three Hours

Maximum : 36 Weightage

Part A

I. Answer *all* fourteen questions very briefly. Each question carries 1 weightage :

- 1 What is the significance of exons and introns ?
- 2 What is biosensor ? Give *one* example.
- 3 What is nick translation ?
- 4 Describe Bio-vaccines.
- 5 What is the role of GF proteins in gene expression studies ?
- 6 What is Linker DNA ?
- 7 Comment on Stem cells.
- 8 What is b \times n gene ?
- 9 What is agrobacterium mediated gene transfer ?
- 10 Write notes on antisense RNA.
- 11 What is sonication ?
- 12 Explain biosensors.
- 13 Write short note on Golden rice.
- 14 What are allergens ?

(14 \times 1 = 14 weightage)

Part B

II. Answer any *seven* questions. Each answer not exceeding 100 words. Each question carries 2 weightage :

- 15 Differentiate YAC and BAC artificial vectors.
- 16 What is dot-blot technique ?
- 17 Explain any *one* vectorless method of gene transfer in plants.
- 18 What are shuttle vectors ?

Turn over

- 19 What is RAPD ?
- 20 What are the ethics related with recombinant DNA research ?
- 21 What are microsatellite and minisatellite ?
- 22 Differentiate between ISSR and SNP polymorphism.
- 23 What is plasmid, cosmid and phage vector ?
- 24 Explain the role of biotechnology in the production of growth hormones.

(7 × 2 = 14 weightage)

Part C

III. Answer any *two* questions. Each answer not exceeding 300 words. Each question carries 4 weightage :

- 25 Describe the enzymatic method of DNA sequencing.
- 26 "GM crops can go a long way towards tackling hunger in the developing world." Comment on this statement with suitable examples of research going on in India.
- 27 Explain the process of DNA finger printing. What are its applications, especially in forensic investigations ?
- 28 Explain the method and applications of PCR. Add a note on inverse PCR and RT-PCR.

(2 × 4 = 8 weightage)