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(Pages : 2)

Name.....

Reg. No.....

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2019

(CUCSS-PG)

Botany

BO 04 ET 14 (03)—GENETIC ENGINEERING

(2010 Admissions)

Time : Three Hours

Maximum : 36 Weightage

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

- 1 What is a nonsense code ?
- 2 Explain genetic fingerprinting.
- 3 What is southern blotting ?
- 4 Describe the advantages of Charon phage.
- 5 What are binary vectors ?
- 6 What is an Ri plasmid ?
- 7 What is vent polymerase ? What is its application ?
- 8 Differentiate between microsatellite and minisatellite.
- 9 What is a phagemid ?
- 10 What is coculture ?
- 11 What is a degenerate code ?
- 12 Why monocots are not naturally infected with Agrobacterium ?
- 13 Name the first genetically engineered vaccine and the organism from which it is produced.
- 14 What are the advantages of using M13 phage in DNA sequencing ?

(14 × 1 = 14 weightage)

II. Answer *any seven* questions in not more than 100 words. Each question carries 2 weightage :

- 15 What is the principle of Sangers method of DNA sequencing ?
- 16 Write down the characteristics of the Agrobacterium infected culture.
- 17 What is the role of virus in gene therapy ?
- 18 Describe reverse transcriptase PCR. What are its applications ?
- 19 Compare RAMPO and SSCP.
- 20 Describe the enzymatic method of DNA sequencing.

- 21 Discuss EST markers and its applications.
- 22 Discuss the probes used in various blotting techniques.
- 23 Discuss the application of nanotechnology in genetic engineering.
- 24 Describe the application of genetic engineering in the production of chemicals and hormones.

(7 × 2 = 14 weightage)

III. Answer any *two* questions in 300 words each. Each question carries 4 weightage :

- 25 Write down the protocol for the transfer of genes from one organism to other. What is the role of blotting techniques in the process ?
- 26 Explain various gene transfer techniques in plants.
- 27 Describe the methodology for genetic fingerprinting and its applications.
- 28 Write an essay on molecular markers.

(2 × 4 = 8 weightage)