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Name.....

Reg. No.....

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, MARCH 2020

(CUCSS)

Botany

BO 04 ET 14 03—GENETIC ENGINEERING

Time : Three Hours

Maximum : 36 Weightage

I. Answer the questions very briefly (Weightage  $14 \times 1 = 14$  Grades : A, B, C, D, E) :

- 1 What is western blotting ?
- 2 What is an expression cassette ?
- 3 Define Codon.
- 4 What is Klenow fragment ?
- 5 Define Transgenesis.
- 6 Differentiate facultative gene and inducible gene.
- 7 What is bioremediation ?
- 8 Comment on cosmids.
- 9 Explain expression profiling.
- 10 What is drug targeting ?
- 11 Write a note on promotor site.
- 12 Explain molecular probes.
- 13 What is chimeric DNA ?
- 14 Differentiate microsatellites and minisatellites.

II. Answer any *seven* questions in not more than 100 words (Weightage  $7 \times 2 = 14$  Grades : A, B, C, D, E) :

- 15 Briefly narrate how the production of hormones could be achieved through genetic engineering
- 16 Write a note on DNA microarrays.
- 17 Explain the importance of DNA fingerprinting in forensic science.

Turn over

- 18 Give an account on *Agrobacterium* mediated transformation.
- 19 Explain restriction mapping.
- 20 Briefly explain hybridoma technology.
- 21 Give an account on the importance of genetically engineered organisms in reducing environmental pollution.
- 22 Explain the principle of electrophoresis. Mention its applications.
- 23 Give an account on the delivery systems used in gene therapy.
- 24 Comment on enzymatic method of gene sequencing.

III. Answer any *two* questions in not more than 300 words (Weightage  $2 \times 4 = 8$  Grades : A, B, C, D, E):

- 25 Explain how a transgenic rice with improved water stress tolerance can be created.
- 26 Write an account on nanobiotechnology and its applications.
- 27 Explain PCR. Write about different types of PCR.
- 28 Explain gene expression in Eukaryotes.