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(Pages : 2)

Name.....

Reg. No.....

SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2024

(CBCSS—UG)

Botany

BOT 6B 14 (E1)—GENETIC ENGINEERING

(2019 Admission onwards)

Time : Two Hours

Maximum : 60 Marks

Section A*Answer all questions.**Each question carries 2 marks.**Ceiling : 20 Marks.*

1. What is a DNA gun ?
2. How is insertional inactivation of an enzyme ?
3. Explain the process of transgenesis.
4. What are the difference between sticky ends and blunt ends ?
5. What is cDNA and why is it important ?
6. Explain the mode of action exonuclease III.
7. What is shuttle vector ? Give an example ?
8. How is digoxigenin-labeled DNA detected ?
9. Write the principle of Southern blotting.
10. What happens during Electroelution ?
11. How do you stain gel after Electrophoresis ?
12. Briefly explain the use of poly-A in RNA extraction.

Turn over

Section B

*Answer all questions.
Each question carries 5 marks.
Ceiling : 30 Marks.*

13. Explain the 4 steps of DNA extraction.
14. How do you determine the concentration and purity of DNA ?
15. What is the principle for plasmid DNA isolation ? How it is different from genomic DNA isolation ?
16. Give an account on buffers used for electrophoresis of nucleic acids.
17. What are essential components of a plasmid used as cloning vector ?
18. What is a polylinker region ?
19. How does DEAE-dextran work ?

Section C

*Answer any one question.
The question carries 10 marks.*

20. Explain various potential mechanisms of gene transfer into eukaryotic cells.
21. Give a detailed account on role of recombinant DNA technology to improve life.

(1 × 10 = 10 marks)