QP CODE: 22001842

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Reg No : .....

Name : .....

M Sc DEGREE (CSS) EXAMINATION, AUGUST 2022

Fourth Semester

M Sc BOTANY

Elective - BY800402 - GENETIC ENGINEERING, GENOME EDITING AND IMMUNOLOGY

2019 ADMISSION ONWARDS

160E458A

Time: 3 Hours Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. What are exonucleases? What is its use in recombinant DNA technology?
2. Distinguish between the cohesive and blunt end of DNA.
3. Briefly describe the problems in cDNA cloning and how to overcome these problems?
4. Which approach of genome editing is suitable for inducing DNA sequence changes in a specified gene?
5. What is Folk1?
6. What is somatic gene therapy?
7. What can be engineered in Proteins during protein engineering?
8. What is meant by Antibody diversity?
9. Define immune modulation.
10. Define Hypersensitivity.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Briefly discuss the features of a cloning vector.
12. Give an account of the preparation of DNA fragments for cloning.
13. What is chromosome walking? Describe its use in rDNA technology?

14. Explain the importance of homologous recombination in gene targeting.

15. Explain the applications of genetically modified bacteria in food and health industries.

16. Comment on the application of genetic engineering in the development of stress tolerant crops.

17. Discuss how monoclonal antibodies are used in diagnosing cancer.

18. Bring out a detailed comparison of the characteristics and actions of attenuated and inactivated vaccines.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Describe in detail the applications of reporter genes in recombinant DNA technology with examples.

20. Discuss the Cre-Recombinase system. Explain why it is the most widely used site specific recombination system.

21. Discuss the application of GM plants in biopharmaceutical industry.

22. What are bioreceptors? Classify biosensors on the basis of the bioreceptor used.

(2×5=10 weightage)