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Reg. No. : .....

Name : .....

Fifth Semester B.Sc. Degree Examination, December 2021

First Degree Programme Under CBCSS

Zoology

Core Course VI

ZO 1542 : GENETICS AND BIOTECHNOLOGY

(2019 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** the questions with **two** diagnostic features (**1** mark each)

1. Allele
2. Morgan units
3. Taq polymerase
4. Meaning of the symbol  in pedigree analysis.
5. BamHI
6. Autosome
7. Reverse transcriptase

P.T.O.

8. Chiasmata

9. Phenylalanine hydroxylase

10. An embryo has a karyotype of 45XWhich abnormality he may develop?

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** of the following. (**2** marks each)

11. Hybridization probe

12. Differentiate spontaneous and induced mutations

13. Factors affecting linkage

14. cDNA library

15. Distinguish test cross and back cross

16. Inheritance of Rh group

17. Principle of Sanger DNA sequencing method

18. Environmental influence on sex determination, provide example

19. Hermaphrodite

20. Frame shift mutations

21. Codominance

22. Lyon hypotheses

23. A hungry goat eat few leaf of a Bt Cotton, what will be the effect?

24. Differentiate genotype and phenotype

25. Karyotyping

26. Law of dominance with example.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** of the following. (**4** marks each)

27. Elucidate Mendel's dihybrid cross, explain the principle of independent assortment.

28. Explain incomplete linkage with example.

29. Write note on PCR.

30. Autosomal anomalies in man.

31. Applications of biotechnology in agriculture.

32. Elucidate Sex linked inheritance.

33. Hybridoma technology.

34. Maternal effects in Drosophila.

35. Comment on cloning.

36. Explane Lygaeus type sex determination.

37. Potential hazards of biotechnology.

38. Comment on multiple alleles with suitable example.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** of the following. (**15** marks each.)

39. Elucidate mechanism and significance of crossing over.

40. Explain the types and use of restriction endonucleases.

41. Comment on different blotting techniques.

42. What are the different types of mutagens?

43. Write an account on different gene transfer techniques.

44. Explain polygenic inheritance and complementary genes.

(2 × 15 = 30 Marks)
