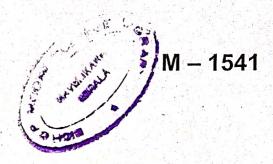
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Fifth Semester B.Sc. Degree Examination, December 2021 First Degree Programme Under CBCSS

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

- 8. Chiasmata
- 9. Phenylalanine hydroxylase
- 10. An embryo has a karyotype of 45XWhich abnormality he may develop?

 $(10 \times 1 = 10 \text{ Marks})$

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.

 $(8 \times 2 = 16 \text{ Marks})$

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.

 $(6 \times 4 = 24 \text{ Marks})$ M - 1541

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.

 $(2 \times 15 = 30 \text{ Marks})$