Reg. No ..... Name **23U625**

B. Sc. DEGREE END SEMESTER EXAMINATION : MARCH 2023

SEMESTER 6 : ZOOLOGY

COURSE : **19U6CRZOO10 : GENETICS AND BIOTECHNOLOGY**

(For Regular - 2020 Admission and Supplementary - 2019 Admission)

Time : Three Hours Max. Marks: 60

PART A
Answer All (1 mark each)

1. Define white biotechnology.
2. What is the restriction-modification system?
3. Define reciprocal cross
4. Differentiate allelic and non allelic interactions
5. Present your idea on linked genes with the help of a diagram
6. Define linkage
7. Specify the function of the chunk of DNA of F factor
8. Why jumping genes are known so?

(1 x 8 = 8)

PART B
Answer any 6 (2 marks each)

9. What are cosmids?
10. Write a note on nucleases.
11. Reflect on the interactions of modifying genes in the coat colour in guinea pigs
12. List out the significance of chromosome mapping
13. Reflect on the aftereffect of nondisjunction with examples
14. Reflect on the genetic mechanisms involved in the color blindness
15. Analyze the consequences of Turner's syndrome
16. Enlist the different measures adopted in negative eugenics

(2 x 6 = 12)

PART C
Answer any 4 (4 marks each)

17. Write a note on the enzymes in genetic engineering.
18. Elaborate on Blotting techniques.
19. Specify the Mendel's laws with suitable crosses
20. Compare and contrast transition and transversion. Explain the molecular basis of genetic variation
21. Discuss the metabolic disorders occur due to spontaneous mutations in the genes
22. Outline the different patterns of single-gene disorders. Exemplify Huntington's disease as an autosomal dominant inheritance

(4 x 4 = 16)

PART D

Answer any 2 (12 marks each)

23. Elaborate on the process of gene amplification in a host cell.
24. Explain in detail the various steps in cell culture procedure.
25. Elaborate chromosomal aberrations focusing on the changes in the number of chromosomes
26. Summarize the techniques used to measure the outcome of the pregnancy. Evaluate critically and favourably on PD tests

(12 x 2 = 24)