

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2026
(Regular/Improvement/Supplementary)

ZOOLOGY
GZOL6E01T: HUMAN GENETICS

Time: 2 Hours

Maximum Marks: 60

SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 20 marks)

1. What do you mean by criss cross pattern of inheritance?
2. Differentiate between a haplotype and a haplogroup.
3. Comment on the factors influencing the occurrence of congenital heart diseases in humans.
4. What is 'mitochondrial eve'?
5. List out the major symptoms associated with Alzheimer's disease.
6. What is schizophrenia?
7. What is the significance of maternal effect genes in embryonic development?
8. Describe the aftermath of mutated DMD gene.
9. What is Ultrasonography?
10. Describe the significance of Paris conference in human genetics.
11. Differentiate between invasive and non-invasive techniques citing examples.
12. Comment on Indian Genome Variation initiative.

SECTION B: Answer the following questions. Each carries *five* marks.
(Ceiling 30 marks)

13. Describe various patterns of autosomal inheritance. Add a note on their pedigree analysis.
14. What are consanguineous marriages? How does consanguinity influence inheritance of genetic diseases?
15. Describe Huntington's disease. Explain the inheritance pattern.
16. What is cystic fibrosis? List the symptoms and discuss the mutation resulting in CF.
17. Explain how genes control the prenatal development of an individual.
18. Briefly explain mitotic and meiotic non-disjunction and their effects.
19. Explain the formation of ring chromosome and their phenotypic effects in humans.

SECTION C: Answer any *one* question. The question carries *ten* marks.

20. What is chromosome banding? Detail out the various banding techniques used for the study of chromosomes.
21. What is meant by genetic counselling? Discuss the attributes and procedure involved.

(1 x 10 = 10 Marks)