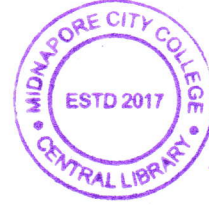


**PG (CBCS)**  
**M.SC. Semester- IV Examination, 2025**  
**ZOOLOGY**  
 PAPER: ZOO 406C  
**(APPLIED GENETICS)**

**Full Marks: 20****Time: 1 Hour**

The figures in the right-hand margin indicate full marks.  
 Candidates are required to give their answers in their own words as far as practicable.

**GROUP-A**

Answer any **TWO** of the following questions: 2×2=4

1. State the 12/23 rule in V(D)J recombination?
2. What is exon trapping and HTF island?
3. Differentiate mouse TCR  $\alpha$ -chain from  $\delta$ -chain DNA.
4. Why variable number tandem repeats, or VNTRs, are more useful for mapping the gene?

**GROUP-B**

Answer any **TWO** of the following questions: 2×4=8

5. What is CpG suppression? State the function of SNPs in the construction of the human genome? 2+2
6. Discuss the molecular diagnosis of Huntington's disease by RFLP?
7. How coding joints and signal joints are created in V(D)J recombination?
8. Differentiate Secreted  $\mu$  and Membrane  $\mu$  of TCR.

**GROUP-C**

Answer any **ONE** of the following questions: 1×8=8

9. What important characteristics can be obtained from the sequencing of the human X chromosome and from Human chromosome 21? Compare the diversity generation in B cell and T cell receptors? Why are microsatellites a better tool for linkage mapping than minisatellites? 4+3+1
10. Describe the process of kappa- light-chain receptor editing.

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