

(Pages : 3)

J – 4131

Reg. No. : .....

Name : .....

**Second Semester M.Sc. Degree Examination, May 2020**

**Branch : Zoology**

**ZO 222 : GENETICS, QUANTITATIVE ANALYSIS AND RESEARCH  
METHODOLOGY**

**(2013 Admission onwards)**

Time : 3 Hours

Max. Marks : 75

SECTION A

Write very brief notes on any **ten** of the following. Select **eight** from Group 1 and **two** from Group 2. Each question carries **2** marks.

GROUP 1

1. Aneuploidy
2. QTL
3. Expressivity
4. Multiple Cloning Site
5. Philadelphia chromosome
6. Mutation
7. YAC
8. Karyotype
9. F' plasmid
10. Lethal alleles
11. Electroporation

P.T.O.



## GROUP 2

12. Dependent Variable
13. Correlation
14. PubMed
15. Research Problem

**(10 × 2 = 20 Marks)**

## SECTION B

Write short notes on any **six** of the following. Select **four** from Group 3 and **two** from Group 4. Each question carries **4** marks.

## GROUP 3

16. Incomplete dominance and Codominance
17. Hardy-Weinberg law
18. X-inactivation
19. Lambda phage vector
20. Lysogenic cycle in Bacteriophage.
21. Genetics of  $\beta$  thalassemia.
22. PCR in Gene cloning

## GROUP 4

23. Kurtosis
24. ANOVA
25. Abstracting for Publication

**(6 × 4 = 24 Marks)**



## SECTION C

Write short essays on any **three** of the following. Select **two** from Group 5 and **one** from Group 6. Each question carries **7** marks.

### GROUP 5

26. Chromatin and G-banding
27. DNA fingerprinting and its applications.
28. Types of restriction and modification (R-M) system.

### GROUP 6

29. Methods of data collection for research.
30. Important parametric tests :
  - (a) z-test ;
  - (b) t-test ;
  - (c)  $\chi^2$ -test, and
  - (d) F-test

**(3 × 7 = 21 Marks)**

## SECTION D

Write an essay on any **one** of the following. Each question carries **10** marks.

31. Give a detailed account on Human Pedigree Analysis and its application to identify inherited genetic diseases.
32. What is Population Genetics? Brief on Genetic variations and its measurement.

**(1 × 10 = 10 Marks)**

