Total No. of Printed Pages: 02

SUBJECT CODE NO: - S-6086
FACULTY OF SCIENCE AND TECHNOLOGY
M.Sc. (Sem-II) (Zoology (Old))
Examination May / June - 2023
Genetics-412

[Time: 3:00 Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

N. B
1) Question paper is divided in 'PART-A' and 'PART-B'.
2) 'PART-A' is compulsory.
3) Attempt any FIVE questions from the 'PART-B'.
4) Draw well labelled diagrams wherever necessary.

Part A

Q1 Attempt the following multiple-choice questions: 20

1. Extra nuclear chromosome occurs in-----.
   a. Chloroplast & Lysosomes
   b. Chloroplast & Mitochondria
   c. Mitochondria & Ribosomes
   d. Peroxisome & Ribosomes

2. A mutation in which parts of two non-homologous chromosomes change places is called ....
   a. Translocation, b. Transversion c. Transition d. Insertion.

3. Kappa particles were discovered by---
   a. Correns b. Medals c. Sonneborn d. Darwin

4. Which of the following is true about the Chromatids?
   a. It is a haploid chromosome
   b. It is a duplicate chromosome
   c. It is a complete chromosome
   d. It is one-half of the replicated

5. Which type of mutation is least likely to revert?
   a. Deletion b. Transversion c. Transition d. Insertion

6. When two or more pairs of independent genes act together to produce a single phenotypic trait.....
   a. Lethal genes b. Multiple gene c. Basic genes d. Cumulative genes

7. The genotypic ratio of a monohybrid cross is----
   a. 1:2:1 b. 3:1 c. 2:1:1 d. 9:3:3:1

8. Genetic identity of a human male is determined by
   a. Sex-chromosome b. Cell organelles c. Autosome d. Nucleolus.

9. The methods used to identify the locus of the gene and distance between genes are called as ....
   a. Gene linkage b. Gene pool c. Gene mapping d. Gene localization

10. Alleles are----
    a. Alternate forms of genes
    b. Chromosomes that have crossed over
    c. Linked genes
    d. Homologous chromosomes

Part-B
(Attempt any FIVE)

Q2	Describe the homologous and non-homologous recombination.	12
Q3	Write Sex limited and sex influenced characters.	12
Q4	Describe the Q.T.L. mapping with example.	12
Q5	Describe Mapping by using somatic cell hybrids.	12
Q6	Define mutation & Describe in detail the various types of mutant.	12
Q7	State the Mendel's law of Dominance? Explain its significance with examples.	12
Q8	Explain the following structural alterations of the chromosomes deletion, duplication, Inversion and translocation	12