Total No. of Printed Pages: 03

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SUBJECT CODE NO: - FF-6523
FACULTY OF SCIENCE AND TECHNOLOGY
M.Sc. (Sem-II) (Zoology)
Examination January-2023
Genetics and Bioinformatics-ZOO-201

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

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Please check whether you have got the right question paper.

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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 diagram wherever necessary.

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PART A

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Q1   Attempt the following multiple choice questions.   20

    1) A fully expressed allele is referred to as ……….. ?

       a) Dominant

       b) Recessive

       c) Homozygous

       d) Heterozygous

    2) Basic tools of genetic regulation are the ability of some proteins to bind to specific …………. ?

       a) Regulatory DNA sequences

       b) Regulatory RNA sequences

       c) Enzymes of cells

       d) Promoter proteins of genes

    3) In males the genes for colourblindness is located in ……..

       a) X-chromosome

       b) Y-chromosome

       c) Both X and Y chromosome

       d) Either X-chromosome or Y-chromosome

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1

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4) Repulsion and coupling are two faces of …….. ?

    a) Mutation

    b) Chiasmata

    c) Linkage

    d) Crossing over

5) There are 4 pairs of Drosophilla, the linkage groups present in it are ………

    a) One more than the pair of chromosomes

    b) One less than the pair of chromosomes

    c) Four

    d) Eight

6) Who was the first person to observe the chromosome?

    a) Fleming

    b) Waldeyer

    c) Strasburger

    d) Hofmeister

7) In eukaryotic and bacteria the most common form of regulation is ……..

    a) Promoter control

    b) Translation control

    c) Repressor control

    d) Transcriptional control

8) Which of the following scientists created the first Bioinformatics database?

    a) Dayhoff

    b) Pearson

    c) Richard durbin

    d) Michael J Dunn

9) MATDB is a model organism database for ………..

    a) Mouse

    b) Human

    c) E.coil

    d) Arabidopsis

10) Which of the following is a sequence alignment tool ……… ?

    a) BLAST

    b) PRINT

    c) PROSITE

    d) PIR

PART B

Attempt any five.

Q2	Describe the linkage and recombination of genes in a chromosome.	12
Q3	Describe the linkage and recombination of genes in a chromosome ?	12
Q4	Write a note on. Gene synthesis ?	12
Q5	Describe the molecular structure of centromere and telomere ?	12
Q6	Write a note on gene function and structure ?	12
Q7	Write a note on Bioinformatics scope and applications ?	12
Q8	Write notes on (Any two)	12

a) Proteomics

b) Drug design

c) Gene action penetrance

3