(FOR THE CANDIDATES ADMITTED

DURING THE ACADEMIC YEAR 2023 ONLY)

23UZY405

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS:-May-2025

B.Sc., ZOOLOGY(Aided)   **MAXIMUM MARKS: 75**

SEMESTER: IV   **TIME : 3 HOURS**

PART - III
23UZY405 – GENETICS

SECTION – A   **(10 X 1 = 10 MARKS)**

ANSWER THE FOLLOWING QUESTIONS.   **(K1)**

1. When one gene masks the expression of another non-allelic gene, it is called as_____

   a) Epistasis b) Pleiotropy c) Lethal genes d) Polygenisis

2. If two genes are located very close to each other on the same chromosome, the recombination frequency between them will be_____

   a) High   b) Low   c) Medium   d) Zero

3. Which of the following is an example for sex linked recessive disorder?

   a) Hypertrichosis b) Haemophilia c) Baldness in man d) Pinna hair

4. Polydactyl is the feature of which type of syndrome_____

   a) Down syndrome b) Klinefelter's syndrome c) Turner's syndrome d) Patau's syndrome

5. The following all viruses uses RNA as its genetic material 'EXCEPT'_____

   a) Tobacco Mosaic Virus b) Adenovirus c) Influenza virus d) HIV

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES   **(K2)**

6. Define Alleles.

7. What is Map Unit?

8. Define Heterosis.

9. What do you mean by Mongoloid idiocy**?**

10. Explain the competent bacteria?

SECTION – B   **(5 X 5 = 25 MARKS)**
ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11.   a) Assess Mendel's law of segregation with an example.

(OR)

       b) Examine how a Man's skin color is an example of polygenic inheritance.

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12. a) Discuss the salient features of linkage.

(OR)

b) Construct a chromosomal map using Drosophila as an example.

13. a) List and explain the causes and effects of inbreeding.

(OR)

b) Differentiate between Monozygotic and Dizygotic twins.

14. a) Describe the symbols used in a pedigree chart and their meanings.

(OR)

b) Find the clinical features, diagnosis and management of Phenylketoneuria.

15. a) Demonstrate Griffth's experiment for bacterial transformation.

(OR)

b) Comment on the components of genetic counseling and its benefits.

SECTION – C (5 X 8 = 40 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K4 (Or) K5)

16. a) With an experimental proof, explain the Mendel's Dihybrid ratio.
(OR)
b) "Human blood group is an example of multiple allelism" – Prove it.

17. a) Compare and contrast Complete and Incomplete linkage. Highlight their significances.
(OR)
b) Discuss the chromosomal theory of sex determination in animals.

18. a) With examples, explain the X – linked inheritance in Man.

(OR)
b) Investigate the types of Aneuploidy and its impact in human beings.

19. a) Enunciate the syndrome caused by non-dysjunction of sex chromosomes.

(OR)
b) Evaluate the role of Eugenics in the development of modern genetics.

20. a) How does bacterial conjugation provide evidence that nucleic acids are responsible for genetic inheritance? – Explain.

(OR)
b) Discuss the experiments that led to the discovery of RNA as genetic material.

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