

13. Explain linkage and crossing over.
illustrate Stern's experiment with the
help of suitable example.

14. Differentiate between sex determination
& sex differentiation. Explain various
theories of sex determination.

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(Printed Pages 4)

(21224)

Roll No. 240686334005

M.Sc. (Bio-Teach..)-I Sem.

NP-3330

M.Sc. Biotech Examination, Dec.-2024

Fundamental of Genetics

(H-101)

(M.Sc. Biotech)

Time : Three Hours.]

[Maximum Marks : 50

Note : Attempt question from **all** section as
per instructions.

Section - A

(Very Short Answer Questions)

Note : Attempt all **five** questions. Each
question carries 2 marks. Answer
should not exceed 100 words. $5 \times 2 = 10$

1. What are multiple alleles?
2. Define epistasis.

P.T.O.

3. Write a note on pleiotropy.
4. Define Turner's syndrome.
5. What is inbreeding depression?

Section - B

(Short Answer Questions)

Note : Attempt any **two** questions. Each question carries 5 marks. Answer should not exceed 250 words. $2 \times 5 = 10$

6. Explain genic balance theory of Bridge in *Drosophila*.
7. Describe in detail ABO type of blood groups and Rh factor in humans.
8. Write about any five pre-mendelian concepts of Heredity/inheritance.
9. Write about the various criteria for extra chromosomal inheritance. Explain extra-chromosomal inheritance by taking example of kappa particles in *Paramecium*.

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Section - C

(Detailed Answer Questions)

Note : Attempt any **three** questions. Each question carries 10 marks.. Answer is required in detail with appropriate diagrams where ever are required.

$$10 \times 3 = 30$$

10. Define mutations. How these are caused? With suitable example explain various methods of detection of mutation in *drosophila*.
11. Write detailed notes on-
 - (i) Dosage compensation
 - (ii) Self in compatibility
 - (iii) Male sterility
 - (iv) Heterosis breeding
12. With the help of Benzer's experiment explain fine structure of R II locus in T_4 Phase.

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P.T.O.