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(21224) Roll No

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. 5×2=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. 2×5=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.

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.

10×3=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.

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.