

Reg. No

Name

26U627

B. Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2026

SEMESTER 6 : ZOOLOGY

COURSE : 19U6CRZOO10 : GENETICS AND BIOTECHNOLOGY

(For Regular 2023 Admission and Supplementary 2022/ 2021/2020/2019 Admissions)

Time : Three Hours

Max. Marks: 60

PART A

Answer All (1 mark each)

1. What are plasmids?
2. Name a few non-biological methods of gene transfer.
3. Find out the possible reasons for mutations.
4. Provide the scientific name of the plant in which the linkage was done in 1906
5. Define pleiotropy.
6. Comment on red biotechnology.
7. What is gene interaction?
8. Why jumping genes are known so?

(1 x 8 = 8)

PART B

Answer any 6 (2 marks each)

9. Explain complementary gene action as an example of inter-allelic interactions.
10. Mention the applications of DNA finger printing.
11. Evaluate the outcomes of a common syndrome caused due to chromosome deletion.
12. Comment on extra nuclear inheritance.
13. Explain the system of sex determination in Bonellia
14. Differentiate serum containing and serum free media.
15. Describe the concept of biopiracy.
16. How physical mutagens interrupt the normal functioning of an organism.

(2 x 6 = 12)

PART C

Answer any 4 (4 marks each)

17. Explain Northern Blotting and its applications.
18. Elaborate on 'FISH' technique.
19. Discuss the metabolic disorders that occur due to spontaneous mutations in the genes.
20. Reflect on the mutations altering the nucleotide sequences.
21. What is single cell protein? Comment on its economic implications.
22. Blood group system in man is a multiple allele condition. Examine the statement.

(4 x 4 = 16)

PART D

Answer any 2 (12 marks each)

23. Discuss the mechanism of the non-genetic way of sex determination using honey bee as an example.

24. Develop an essay on the anomalies that occur during intrauterine life. Add notes on the criss-cross inheritance of sex-linked characters.
25. How is the transfer of genes into the desired cells achieved?
26. Explain stem cells, its various types and its potential applications.

(12 x 2 = 24)