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Reg. No. : ....

Name : ....

Sixth Semester B.Sc. Degree Examination, April 2024

Career Related First Degree Programme under CBCSS

Botany and Biotechnology

Core Course

BB 1641 : GENETICS

(2019 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions in **one** word to maximum of **2** sentences.

1. Write the Mendelian monohybrid back cross ratio.

2. What is a dihybrid cross?

3. Define epistasis.

4. What are additive alleles?

5. Define interference.

6. What are complementary genes?

7. Give an example for sex linked inheritance.

8. Define recon.

9. What are transposons?

10. What are proto-oncogenes?

(**10 × 1 = 10 Marks**)

P.T.O.

SECTION – B

Answer any **eight** questions in not more than **one** paragraph.

11. Distinguish between A and B DNA.

12. What is central dogma?

13. What are okazaki fragments?

14. Write a note on Turner's syndrome.

15. Comment on multiple alleles.

16. Distinguish ligase from polymerase.

17. What is polygenic inheritance?

18. State law of dominance.

19. Explain linkage.

20. Differentiate between back cross and test cross.

21. What is recombination?

22. What are introns?

SECTION – C

(8 × 2 = 16 Marks)

Answer any **six** questions not more than **120** words.

23. Explain the mechanism of xx-xy sex determination citing an example.

24. What is three point test cross mapping?

25. Explain the structure of t RNA.

26. State and explain Hardy Weinberg equilibrium.

27. What is genetic code? Point out the stop codons.

28. What are sex chromosomal abnormalities? Explain with an example.

29. Write brief note on (a) codominance (b) wobble hypothesis.

30. Explain the mechanism of 13:3 in leaf colour of rice.

31. What is epigenetics? What is its significance?

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions not more than **500** words.

32. Explain the double helical structure of DNA with illustration.

33. Describe the process of translation in prokaryotes.

34. Discuss on the interaction of genes using 9:3:3:1 comb pattern in poultry.

35. 'DNA replication is semi conservative'. Explain the experiment that proved it.

(2 × 15 = 30 Marks)

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