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N – 1589

Reg. No. : .....

Name : .....

**Sixth Semester B.Sc. Degree Examination, April 2022**  
**Career Related First Degree Programme under CBCSS**  
**Botany and Biotechnology**  
**BB 1641 : GENETICS**  
**(2019 Admission)**

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions in **one** word or **two** sentences. **Each** question carries **1** mark.

1. What is recon?
2. What is Self sterility?
3. What is a luxury gene?
4. Expand rRNA.
5. What is degeneracy of genetic code?
6. What is a back cross?
7. What is the role of primase?
8. Define muton?
9. What is Y linked inheritance?
10. Define coefficient of coincidence.

**(10 × 1 = 10 Marks)**

P.T.O.

## SECTION – B

Answer any **eight** questions. Short Answer (Not to Exceed **One** Paragraph). **Each** question carries **2** marks.

11. Explain dihybrid cross.
12. State the law of dominance.
13. List the characteristics of Garden pea which make the best material for genetic experiments.
14. What are complementary genes?
15. What is polygenic inheritance?
16. Differentiate between B and Z DNA.
17. How does shell coiling in snails inherit?
18. What is a transcription factor?
19. Comment on enhancers.
20. Differentiate between dominant and recessive epistasis.
21. What is the function of helicase in DNA replication?
22. What is Junk DNA? What is its significance?
23. What is genetic drift?
24. With an example elaborate 1:1:1:1 ratio of inheritance.
25. Comment on Rh factor.
26. How is skin colour in man inherited?

**(8 × 2 = 16 Marks)**

## SECTION – C

Short Essay(Answer any **six** questions). **Each** carries **4** marks.

27. Explain triplet code and its properties.
28. What is SOS DNA repair?
29. What is RNA splicing?
30. Comment on Turners Syndrome.
31. What are the functions of rRNA?
32. How does base excision repairwork?
33. What is a rolling circle mechanism?
34. Discuss genic balance theory.
35. Explain the 9:6:1 ratio in genetics.
36. What is Klinefelter's syndrome?
37. How is ear size inherited in maize?
38. Discuss the inheritance of flower colour in *Lathyrus*.

**(6 × 4 = 24 Marks)**

## SECTION – D

Essay Questions (Answer any **two** questions). **Each** question carries **15** marks.

39. Give an account on modified mendelian ratios? Explain the mechanisms of inheritance of these ratios.
40. Elaborate the mechanisms of extra nuclear inheritance with examples.
41. Give a detailed sketch on the structure and functions of DNA? Comment on DNA mutation.

42. Comment on the enzymology of DNA replication process.
43. Explain how quantitative characters are inherited with suitable examples.
44. What is sex determination? Discuss various methods and abnormalities.

**(2 × 15 = 30 Marks)**

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