

Reg. No. :

Name :

Sixth Semester B.Sc. Degree Examination, April 2023

Career Related First Degree Programme under CBCSS

Group 2(a) : Botany and Biotechnology and

Group 2(b) : Biotechnology (Multimajor)

BB 1641/BV 1641.1 : GENETICS

(2015 – 2018 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

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

1. What is a gene pool?
2. Give an example for codominance.
3. What are holandric genes?
4. Name a DNA repair pathway.
5. What are duplicate genes?
6. Define test cross.
7. What is central dogma?
8. Name the meiotic stage at which chiasmata formation take place.
9. What is double crossing over?
10. Define a cistron.

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions. Each question carries **2** marks. (Answer not to exceed **1** paragraph)

11. What are luxury genes?
12. Explain the chromosomal basis of sex determination.
13. Comment on Turner's syndrome.
14. What is satellite DNA?
15. List the features of genetic code.
16. What are complementary genes?
17. State Mendel's law of segregation.
18. Brief a note on oncogenes.
19. What is two point test cross?
20. Differentiate between coincidence and interference.
21. What is genotype frequency?
22. Explain the flower colour pattern in *Mirabilis jalapa*.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. Each question carries **4** marks. (Answer not to exceed **120** words)

23. Explain the inheritance pattern of shell coiling in snails.
24. What are transposons? Explain its types.
25. Discuss the reasons for success of Mendel during garden pea experiments.

26. Brief a note on enzymes involved in DNA replication.
27. What is polygenic inheritance? Explain with an example
28. What are the steps in eukaryotic transcription?
29. Comment on multiple allelism in terms of blood groups in man.
30. Explain the structure and function of tRNA.
31. What is a linkage map? How it is constructed?

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Each question carries **15** marks. (Answer not to exceed **3** pages)

32. Define epistasis. Give an account on various epistatic gene interactions citing examples.
33. What is Hardy Weinberg Equilibrium? Discuss the factors affecting genetic equilibrium.
34. Describe sex linked inheritance with suitable examples.
35. Explain Hershey and Chase experiment to identify DNA as the genetic material. Compare and contrast A, B and Z forms of DNA.

(2 × 15 = 30 Marks)