

S.No. 15319

RCCSBI 3

(For candidates admitted from 2008–2015 Batch)

B.Sc. DEGREE EXAMINATION,

APRIL-2022

Part III — Biotechnology — Major

MOLECULAR GENETICS

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20)

Answer ALL the questions in one or two lines.

1. Acrocentric
2. Histones
3. Rh factor
4. Sex - chromatin
5. Central Dogma
6. C - value paradox
7. Transposable element in Maize

8. Application of plasmids
9. Conjugation
10. Lac Operon.

SECTION B — ($5 \times 5 = 25$)

Answer ALL the questions, choosing either (a) or (b)

Draw diagrams wherever necessary.

11. (a) Write short note on Lmpbrush chromosomes.

Or

- (b) What is trisomy? Write about primary, secondary, and tertiary trisomy.

12. (a) What is karyotype? How does it help in the identification of chromosomal anomalies in man?

Or

- (b) Write short notes on Klinefelter's syndrome.

13. (a) What are the major events in replication fork.

Or

- (b) DNA as a genetic material- Justify.

14. (a) Write a note on bacterial transposons.

Or

- (b) Comment on retroviruses.

15. (a) Give a brief account on the genetic system of Neurospora.

Or

- (b) Define: Promotor, operator, terminator and attenuator.

SECTION C — ($3 \times 10 = 30$)

Answer any THREE questions.

16. Describe structure and function of chromosome.
17. Explain the mechanism of sex-linked inheritance with a suitable example from man.
18. Give a detailed account on the mechanism of replication in eukaryotes.
19. Give a detailed account on viral replication.
20. Describe Operon concept of genetic control of Protein synthesis.