

Q.P. Code : 11134

**First Semester B.Sc. Degree Examination,
November/December 2019**

(CBCS – Freshers & Repeaters)

Biotechnology

Paper I – CELL BIOLOGY AND GENETICS

Time : 3 Hours]

[Max. Marks : 70

Instructions to Candidates :

- 1) *All Sections are compulsory.*
- 2) *Draw neat labeled diagrams wherever necessary.*

SECTION – A

- I. Write short notes on the following : **(5 × 2 = 10)**
1. Non-disjunction
 2. S-Phase
 3. Euchromation
 4. Nuclear lamina
 5. Phenotype.

SECTION – B

- II. Answer any **FOUR** of the following : **(4 × 5 = 20)**
6. Explain the different substages of meiotic prophase I.
 7. Discuss cytoplasmic inheritance with reference to *Mirabilis*.
 8. Describe the ZW-ZZ and XX-XO method of sex determination.
 9. Explain the types of RNA and its function.
 10. What are allosomal disorders? Write a note on Klinefelter's syndrome.

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SECTION - C

(3 × 10 = 30)

III. Answer any **THREE** of the following :

11. Describe in detail the ultra structure of plant cell. Add a note on the functions of vacuole.
12. Explain the structure and functions of
 - (a) Ribosomes
 - (b) Lysosomes
13. What is multiple allelism? Explain in detail with a suitable example.
14. Give an account on :
 - (a) ultra structure of chromosomes
 - (b) classification of chromosome based on position of centromere.
15. Explain in detail the chromosomal evolution of wheat and cotton.

SECTION - D

IV. Answer the following in 1 word or a sentence each.

(10 × 1 = 10)

16. An organelle present in animal cell but absent in plant cell.
17. What are peroxisomes?
18. What are facultative heterochromatic?
19. Who proposed the nucleosome model of chromosomes?
20. What is astral mitosis?
21. Name the nitrogenous base found in RNA but not in DNA.
22. Who proposed the chromosome theory of linkage?
23. What is meant by heterogametic males?
24. What are base analogues?
25. Give the chromosomal complement of Down's syndrome.