

**BACHELOR'S DEGREE (C.B.C.S) EXAMINATION, MARCH 2025**  
**2018, 2019, 2020, 2021 ADMISSIONS SUPPLEMENTARY**  
**SEMESTER VI - CORE COURSE BOTANY**  
**BO6B10B18 - Cell and Molecular Biology**

Time : 3 Hours

Maximum Marks : 60

**Part A**

**I. Answer any Ten questions. Each question carries 1 mark****(10x1=10)**

1. What are plasmodesmata?
2. What are the functions of microtubules and microfilaments?
3. Write a short account on centromere.
4. Define cell cycle.
5. Explain spontaneous and induced mutations.
6. Name the pyrimidine bases.
7. What is a nucleotide?
8. Which are the purine bases?
9. What are split genes?
10. What is TATA box?
11. Write down the general structure of an amino acid.
12. What is a cistron? Who coined this term?

**Part B**

**II. Answer any Six questions. Each question carries 5 marks****(6x5=30)**

13. Write a brief account on special types of chromosomes.
14. What are ribosomes? Discuss the types, structure and functions of the ribosome.
15. Compare and contrast mitosis and meiosis.
16. Write a note on point mutation.
17. Write an account on different alternate forms of DNA.
18. Explain the structure and function of t-RNA.
19. Discuss one gene one enzyme hypothesis and one gene one polypeptide hypothesis with examples.
20. What is an operon? Illustrate with an example. What is its significance?
21. How is hnRNA modified in prokaryotes?

**Part C**

**III. Answer any Two questions. Each question carries 10 marks****(2x10=20)**

22. Describe the stages of reduction division of a cell.
23. Write an essay on the types of mutations. Add a note on molecular basis of mutations.
24. Explain with suitable diagrams the structure of DNA.
25. What are the steps involved in translation in prokaryotes? Illustrate your answer.