TB206165W

Reg. No :.....

Name :.....

B. Sc. DEGREE (C.B.C.S.) EXAMINATION, MARCH 2023

(2020 Admission Regular, 2019, 2018 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. Name the scientist who introduced the term 'Cell".
2. Write a short note on supernumerary chromosomes.
3. What are the functions of microtubules and microfilaments?
4. Explain the significance of mitosis.
5. Explain allopolyploidy.
6. Write the structure of sugar molecule present in DNA.
7. What is a nucleotide?
8. Write the dimensions of a DNA helix.
9. Distinguish between introns and exons.
10. Define genetic code.
11. Discuss the role of helicase enzyme in transcription.
12. What are peptide bonds? Why is it significant?

Part B

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

13. Illustrate and explain the structure of the chloroplast. Add a note on its function.
14. Explain the structure and functions of the mitochondria with a diagram.
15. Explain interphase of cell cycle.
16. Write a detailed account on aneuploidy
17. Write a detailed account on ribosomal RNA.
18. Write notes on DNA polymerases.
19. Describe with diagrams, the process of termination of transcription in prokaryotes.
20. Distinguish between inducible and repressible operons with examples.
21. Distinguish between positive and negative controls of gene expression with examples.

Part C

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

22. Illustrate and explain the stages of reduction division and equational division.
23. Explain structural and numerical aberrations of chromosomes.
24. Discuss the structure and functions of different types of RNA molecules.
25. Write an essay on the raw materials needed and the process of transcription in prokaryotes.