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B.Sc./4th Sem (H)/BOT/23(CBCS)

2023

4th Semester Examination

BOTANY (Honours)

Paper : C 8-T

(Molecular Biology)

[CBCS]

Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

**Group - A**

Answer any *five* questions of the following :

2×5=10

1. What is replisome?
2. What is 'Kornberg's enzyme'?
3. Define micro RNA.
4. Define C-value.
5. Why RNA primer is required for DNA replication?
6. What is the use of 5' cap in maintaining RNA structure?

P.T.O.

( 2 )

7. What is nucleosome?
8. What is Wobble hypothesis?

**Group - B**

Answer any *four* of the following :  $5 \times 4 = 20$

9. Short notes on :  $2\frac{1}{2} + 2\frac{1}{2}$ 
  - (i) Termination of translation.
  - (ii) Charging of amino acid.
10. Briefly describe the post-transcriptional modification of proteins. 5
11. Write the principle of Griffith's experiment. Briefly describe the confirmative experiment of genetic material. 1+4
12. What is spliceosome? Briefly describe the process of splicing. 2+3
13. State the major features of genetic code and their exceptions. 5
14. Define operon. Who proposed the operon concept? Explain the negative control of Lac operon. 1+1+3

**Group - C**

Answer any *one* of the following :  $10 \times 1 = 10$

15. Describe the negative control of lactose operon. What is heat shock protein? 8+2



( 3 . )

16. Explain the role of various enzymes involved in DNA replication. Briefly describe the  $\theta$ -model of DNA replication. What is fidelity of translation? 4+4+2
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