QP Code: U25DIS010

Reg. No : .....

Name : .....

ST MARY'S COLLEGE (AUTONOMOUS), THRISSUR-20

I SEMESTER (FYUGP) DEGREE EXAMINATIONS, NOVEMBER 2025

(Improvement/Supplementary)

BTY1MN101 : Introductory Biology

2024 Admission Only

(Credits: 4)

Time: 2 Hours **Maximum Marks: 70**

Section A

*Answer **all**. Each question carries **3** Marks.* ***(Ceiling: 24 Marks)***

1. Give two examples of non-living infectious agents.
2. List the four elements most abundant in living organisms.
3. What do restriction enzymes do in Molecular Biology?
4. State the significance of ribosomes in protein synthesis.
5. How do cells communicate with each other?
6. What are okazaki fragments ? Mention its significance in replication process.
7. What are Transcription factors?
8. What is the significance of RT - PCR in molecular diagnostics?
9. What is the role of plasmids in bacterial genetics?
10. What are GMOs ?

Section B

*Answer **all**. Each question carries **6** Marks.* ***(Ceiling: 36 Marks)***

11. Explain the significance of mitosis and meiosis.
12. Discuss the role of hydrogen bonding in the stability of DNA structure.
13. Explain different levels of structural conformations of proteins. and their functions.
14. Describe the process and applications of enzyme technology in industry.
15. Discuss the importance of biodiversity. How the Tree of Life illustrates evolutionary relationships?
16. How do structural differences between RNA types influence their roles in protein synthesis?

Turn Over

17. How does the molecular structure of water contribute to its role as a universal solvent in cells?

18. Explain the gene cloning differs from gene editing.

Section C

*Answer **any one**.* ***(1x10=10marks)***

19. What are the structural and functional differences between prokaryotic and eukaryotic cells? Describe how these differences contribute to the complexity of multicellular organisms.

20. Propose a biotechnology-based solution to reduce dependence on chemical pesticides.

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