QP Code: UV25DR004

Reg. No : .....
Name : .....

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

I SEMESTER (FYVP) DEGREE REGULAR EXAMINATIONS, NOVEMBER 2025
B. Voc. Applied Biotechnology
ABT1CJ101 : Introduction to Biotechnology
2025 Admission Onwards

Time: 2 Hours **Maximum Marks: 60**

Section A

*Answer **all** questions. Each question carries **2** Marks. **(Ceiling 20)***

1. List the main branches of biotechnology.
2. Explain the concept of the central dogma of Molecular Biology.
3. What is biogas and how is it produced?
4. What is informed consent in biotechnology research?
5. Define PCR.
6. Apply the use of a centrifuge to design a step for separating plasma from blood samples.
7. Apply electrophoresis principles to identify the molecular weight of DNA fragments.
8. Compare bubble column and airlift bioreactors in terms of design?
9. How is the enzyme rennet applied in the food industry?
10. Propose a simple biotechnology-based method to clean oil-contaminated water.
11. Analyze the role of regulatory bodies in addressing ethical concerns in biotech products?
12. Evaluate the advantages of using nanoparticles in drug delivery.

Section B

*Answer **all** questions. Each question carries **6** Marks. **(Ceiling 30)***

13. List the basic steps of CRISPR-Cas9 gene editing.
14. Summarise the main goal of biotechnology entrepreneurship.
15. Differentiate between the structures and functions of DNA, RNA, and proteins.
16. Explain how biotechnology can be applied to promote environmental sustainability.
17. Analyze how the evolution of biotechnology has influenced modern medicine.

Turn Over

18. Evaluate the ethical implications of patenting genetically modified organisms (GMOs).

Section C

*Answer **any One**. Each question carries **10** Marks.* ***(1X10=10 Marks)***

19. State the working principle of spectrophotometry.
20. Evaluate the advantages and limitations of using plasmids as vectors in genetic engineering.

****