QP Code: P25DRIS004

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

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

I SEMESTER (CBCSS - PG) DEGREE EXAMINATIONS, OCTOBER 2025
(Regular/Improvement/Supplementary)
M. Sc. General Biotechnology
GBT1C01 : Cell Biology
2024 Admission Onwards

Time: 3 Hours **Maximum Weightage: 30**

Part A
*Short answer type questions. Answer **any four**. Weightage **2** for each.*
(4x2 = 8 Weightage)

1. What powers the movement of cilia and flagella?
2. Explain the function of ion channels in the passive transport.
3. Outline the significance of ubiquitination in protein regulation.
4. How does the cell cycle control prevent the uncontrolled cell division?
5. Predict the growth pattern of a plant, when exposed to unidirectional blue light.
6. Examine the importance of mitochondrial enzymes in the Kreb's cycle.
7. Relate the role of the death-inducing signaling complex (DISC) in the extrinsic pathway.

Part B
*Short essay-type questions. Answer **any four**. Weightage **3** for each.*
(4x3 = 12 Weightage)

8. Comment on the contributions of Anton van Leeuwenhoek to Cell Biology.
9. Describe the different types of cell junctions found in animal tissues.
10. Identify the difference between tumor suppressor genes and oncogenes in terms of their function.
11. Compare cisternal maturation and vesicle transport models of Golgi function.
12. Evaluate the mechanism of antibiotics targeting translation.
13. Explain the mode of action of antibiotics like penicillin on the bacterial cell walls.
14. What are the three main checkpoints in the cell cycle?

Turn Over

Part C

*Essay-type questions. Answer **any two**. Weightage **5** for each.*
(2x5 = 10 Weightage)

15. Explain the four levels of protein structure with diagrams.
16. Give a detailed account of protein targeting and import into peroxisomes.
17. Analyze the functioning of tight junctions, gap junctions and adherens junctions to maintain the function of tissues.
18. Interpret the molecular mechanisms involved in photophosphorylation within chloroplasts and their importance in energy production.

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