

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086**  
**(For Candidates admitted during the academic year 2011 – 12 & thereafter)**

**SUBJECT CODE: 11ZL/MC/CM34**

**B.Sc. DEGREE EXAMINATION - NOVEMBER 2015**  
**BRANCH VI A – ADVANCED ZOOLOGY & BIOTECHNOLOGY**  
**THIRD SEMESTER**

**COURSE : MAJOR CORE**  
**PAPER : CELL AND MOLECULAR BIOLOGY**  
**TIME : 3 HOURS**

**MAX. MARKS: 100**

**SECTION A**

**ANSWER ALL THE QUESTIONS.**

**(10 x 3 = 30)**

1. What is endosymbiont theory?
2. Draw and label a chloroplast.
3. List the functions of lysosomes.
4. What are post translational modifications? Give an example.
5. What is antisense RNA?
6. What are B chromosomes? Give examples.
7. What are transcription factors?
8. Comment on carrier proteins.
9. Define pyrosequencing.
10. What is cell death?

**SECTION B**

**ANSWER ANY FIVE QUESTIONS.**

**(5 x 6 = 30)**

11. Differentiate prokaryotic and eukaryotic cells.
12. Explain the process of protein synthesis or translation.
13. Explain in detail the fluid mosaic model of the cell membrane.
14. What is Human Genome Project? Comment on its significance.
15. Write an account on giant chromosomes.
16. Describe the structure of tRNA and highlight its role in protein synthesis.
17. List the characteristics of a cancer cell.

**SECTION C**

**ANSWER ANY TWO QUESTIONS.**

**(2 x 20 = 40)**

18. Enumerate the events that take place during DNA replication.
19. Describe the regulation of gene expression in bacteria using the Operon Model.
20. Describe mitosis with neat diagrams.
21. Give a detailed account of the structure and functions of Mitochondria.

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