

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086**  
**(For Candidates admitted during the academic year 2015 – 2016 & thereafter)**

**SUBJECT CODE: 15ZL/MC/CM54**

**B.Sc. DEGREE EXAMINATION - NOVEMBER 2018**  
**BRANCH VI A – ADVANCED ZOOLOGY & BIOTECHNOLOGY**  
**FIFTH SEMESTER**

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

**MAX. MARKS: 100**

**SECTION – A**

**ANSWER ALL QUESTIONS**

**(10 x 3 = 30)**

1. Draw and label a prokaryotic cell.
2. List the functions of ribosomes.
3. What is meant by cell death?
4. What is Sanger method of DNA sequencing?
5. Define Operon. Give an example.
6. What is a cell membrane? Mention any two characters.
7. What is nuclear organization?
8. Differentiate benign and malignant tumour.
9. What is meant by DNA repair? Mention the enzymes involved.
10. What is genetic code?

**SECTION – B**

**ANSWER ANY FIVE QUESTIONS**  
**(Draw diagrams where necessary)**

**(5 x 6 = 30)**

11. Give a short account on the origin of eukaryotic cells.
12. Draw and describe the structure of a mitochondrion.
13. List the types of chromosomes and describe the structure of a typical chromosome.
14. Give a short account on the Human Genome Project.
15. Describe the Lac Operon model.
16. Describe the structure and functions of the Golgi apparatus.
17. List the types of RNA and add a note on their functions.

**SECTION – C**

**ANSWER ANY TWO QUESTIONS**  
**(Draw diagrams where necessary)**

**(2 x 20 = 40)**

18. Write a detailed account on cell membrane.
19. Give an elaborate account on the biology of cancer.
20. Write an essay on the replication of DNA.
21. Describe the stages of mitosis with suitable diagrams and explain the regulation of cell cycle.

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