

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**  
**(For candidates admitted during the academic year 2006 – 07 & thereafter)**

**SUBJECT CODE: BY/PC/MB15**

**M. Sc. DEGREE EXAMINATION, NOVEMBER 2008**  
**BIOTECHNOLOGY**  
**FIRST SEMESTER**

**COURSE : CORE**  
**PAPER : MOLECULAR BIOLOGY**  
**TIME : 3 HOURS**

**MAX. MARKS: 100**

**SECTION – A**

**ANSWER ALL QUESTIONS.**

**20 X 1 = 20**

1. Z DNA has base pairs in one complete turn.  
a) 11                      b) 10                      c) 9.3                      d) 8
2. Draw structure of t-RNA
3. Transposons
4. Genes present in Chloroplast DNA
5. Upstream and downstream regulation of genes
6. TATA Box
7. Lampbrush chromosomes
8. Signal peptide
9. Inhibitors of transcription in eukaryotes.
10. Heats hock proteins
11. Telophase in meiosis
12. Nuclear proteins
13. Introns
14. UMP
15. Wobble Hypothesis
16. Define: Gene
17. Spindle Fibres
18. Phosphodiester bond
19. Attenuation
20. T<sub>m</sub> value

**SECTION – B**

**ANSWER ANY FOUR QUESTIONS, EACH WITHIN 600 WORDS. (4 x 10 = 40)**

21. Describe DNA repair mechanisms.
22. Which are the different types of DNA?
23. Discuss the transcriptional regulation in eukaryotes.
24. Explain the organization of prokaryotic genome.
25. Differentiate mitotic cell division and meiotic cell division.
26. RNA behaves both as a protein and as a nucleic acid – Justify.

**SECTION – C**

**ANSWER ANY TWO QUESTIONS, EACH WITHIN 1500 WORDS. (2 x 20 = 40)**

27. Discuss mitochondrial genome in detail
28. Explain cell cycle and its regulation.
29. Describe transcription, translation and its regulation in bacteria.
30. Explain types of RNA, its functions and RNA processing.

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