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

SUBJECT CODE: BY/PC/MB14

M. Sc. DEGREE EXAMINATION, NOVEMBER 2007
BIOTECHNOLOGY
FIRST SEMESTER

COURSE : CORE
PAPER : MOLECULAR BIOLOGY
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

ANSWER ALL QUESTIONS. **20 X 1 = 20**

1. Define a gene.
2. Write the structure of cAMP & TMP.
3. What do you mean by degeneracy of genetic code?
4. Why prokaryotic mRNAs are not processed?
5. What is Shine-Dalgarno sequence?
6. Name the start & stop codons.
7. What are coding & non-coding sequences?
8. What are LINES & SINES?
9. What are enhancers and silencers?
10. How many genes are present in chloroplast DNA?
11. Name a few homeotic genes.
12. Name the proteins which regulate cell cycle.
13. What are the two modes of transposition?
14. What is LTR? Where is it present?
15. What are Ty & copia elements?
16. What are heat shock genes?
17. What is meant by RNA editing?
18. What are Snurps?
19. What are promoters? Give eg.
20. How many base pairs are there in one complete turn in B-DNA?

..2

SECTION – B

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

21. Write a note on a) DNA methylation b) histone modification
22. Describe the role of three RNAs in protein synthesis.
23. Write about the translational regulation in prokaryotes.
24. Write a note on mobile DNA.
25. Explain the post transcriptional processing of mRNA in eukaryotes.
26. Describe DNA replication.

SECTION – C

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

27. Discuss about the different levels of DNA organization of eukaryotic genome.
28. Describe the mitochondrial DNA and its genome.
29. Describe in detail about the prokaryotic transcriptional regulation.
30. Write about cell cycle & its regulation.

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