STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI –600 086
(For candidates admitted from the academic year 2015 – 2016)

SUBJECT CODE: 15BI/PC/MB24

M. Sc. DEGREE EXAMINATION, APRIL 2016
BIOINFORMATICS
SECOND SEMESTER

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

SECTION – A

ANSWER ALL QUESTIONS **(20 X 1=20)**

1. Define genome.
2. What is a base pair?
3. Define transcription.
4. Mention the two sites present in RNA polymerase.
5. Where does protein synthesis occur?
6. Define Genetic Code.
7. What are eukaryotes?
8. Define a gene.
9. What are Heat Shock Genes?
10. What is the role of RNA polymerase in transcription?
11. Which are the work horses of the cell?
12. What is a triplet code?
13. Define wobble hypothesis.
14. What are transposons?
15. What are restriction enzymes?
16. Define cDNA.
17. What is the function of a centriole?
18. Write a note on the zygonema stage in meiosis.
19. Define synapsis.
20. What are carcinomas? Give an example.

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SECTION – B

ANSWER ANY FOUR QUESTIONS. EACH ANSWER SHOULD NOT EXCEED 500 WORDS. All QUESTIONS CARRY EQUAL MARKS. DRAW DIAGRAMS WHEREVER NECESSARY (4 X 10 = 40)

21. Draw a neat labeled diagram of the DNA and explain its organization.
22. Write a note on transposable elements.
23. Elaborate on the process of transcription in eukaryotes.
24. Write a note on the role of regulatory proteins in transcription.
25. Explain translational regulation in prokaryotes.
26. Explain the organization and function of the chloroplast genome.
27. What is cell cycle? Explain its regulation.

SECTION – C

ANSWER ANY TWO QUESTIONS. EACH ANSWER SHOULD NOT EXCEED1200 WORDS. All QUESTIONS CARRY EQUAL MARKS. DRAW DIAGRAMS WHEREVER NECESSARY (2 X 20 = 40)

28. Elucidate the organization of a eukaryotic genome.
29. Explain the regulation of transcription and the role of steroid hormone receptors and homeotic genes.
30. Give an account on the genetic control of vertebrate immune system.
31. Write notes on: a) the genetic basis of Cancer, b) Stages in mitosis.

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