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

SUBJECT CODE: 15BI/PC/BP14

M. Sc. DEGREE EXAMINATION, NOVEMBER - 2018
BIOINFORMATICS
FIRST SEMESTER

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

SECTION – A

ANSWER ALL QUESTIONS: (20X1=20)

1. Define sigma bond.
2. Write about VSEPR theory?
3. What is the significance of de Broglie's equation?
4. Define Second Law of Thermodynamics.
5. What is the Beer Lambert law formula?
6. Define Absorption spectroscopy.
7. Raman effect.
8. What is the principle of infrared spectroscopy?
9. What is meant by spin–spin coupling?
10. Define angular momentum?
11. What is 1D NMR?
12. How do you measure absorbance?
13. Define mass-to-charge ratio.
14. How does a MALDI TOF work?
15. Write about Chymotrypsin?
16. Quadrupole mass analyzer.
17. Define diffraction.
18. How does a crystallography work?
19. What is an atomic force microscope?
20. What are the three main types of intermolecular forces?

SECTION- B

ANSWER ANY FOUR QUESTIONS (4X10=40)

21. Write about Postulates of the Bohr Atomic Model?
22. What are the Types of Thermodynamic Systems?
23. Write about applications of Fluorescence spectroscopy.
24. Write the principle and instrumentation UV-Visible Spectroscopy.
25. Write about peptide mass fingerprinting?
26. Brief about 2D-NMR?
27. Write about CFM and its applications?

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SECTION – C

ANSWER ANY TWO QUESTIONS (2X20=40)

28. Explain Raman Spectroscopy and its spectrum.
29. Write about Tandem mass spectrometry principle, methodology and applications?
30. Write about NMR principle, methodology and applications in structure prediction.
31. Brief about Crystal growth and its mechanism?

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