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

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SUBJECT CODE: 15BI/PC/BP14

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M. Sc. DEGREE EXAMINATION, NOVEMBER 2016
BIOINFORMATICS
FIRST SEMESTER

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

SECTION - A

ANSWER ALL OF THE FOLLOWING QUESTIONS: 20x1=20

1. Define Valency.

2. Define enthalphy.

3. What are orbitals?

4. State beer-lambert's law.

5. What are Fluorophores?

6. What is the wavelength range of visible & UV light?

7. What is hyperchromic effect?

8. What is chemical shift?

9. IR-spectra.

10. Tandem Analyser.

11. Nuclear spin.

12. AFM.

13. MALDI-TOF.

14. Crystal growth.

15. Resonance.

16. CFM.

17. Chromophores.

18. Entrophy.

19. Crystallography.

20. Spin-spin interaction.

SECTION B

ANSWER ANY FOUR OF THE FOLLOWING: 4x10=40

21. Explain De-Broglietheory of matter.

22. State the laws of thermodynamics & give its application.

23. Explain 'Fingerprinting' using Raman spectra.

24. Explain the Nuclear overhauser effect.

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25. What are the components of crystal growth?

26. Explain the steps involved in crystallography?

27. Explain the principle & application of Fluorescence spectroscopy.

SECTION C

ANSWER ANY TWO OF THE FOLLOWING   **2x20 = 40**

28. Explain NMR & its application.

29. Derive Schrodinger wave equation & explain its interpretation.

30. Explain the principle & working of MALDI-TOF.

31. Write the principle, instrumentation & application of UV-Visible spectroscopy.

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