

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2011 – 12)

SUBJECT CODE: 11BI/PC/BC14
M. Sc. DEGREE EXAMINATION, NOVEMBER - 2011
BIOINFORMATICS
FIRST SEMESTER

COURSE : CORE
PAPER : BIOCHEMISTRY
TIME : 20 MINUTES

MAX. MARKS: 20

SECTION – A

ANSWER ALL QUESTIONS:

(20X1=20)

1. Define Biomolecules.
2. What are amphoteric substances?
3. Define a eukaryotic cell.
4. Mention any two functions of the cell membrane.
5. What is dextrose?
6. Give the structure of a reducing disaccharide.
7. Define oxidative deamination.
8. What are xenobiotics?
9. What is a domain?
10. Define denaturation.
11. What are phospholipids? Give examples.
12. Give the structure of a purine base.
13. What are biocatalysts?
14. Define K_m .
15. What is feedback inhibition?
16. Define active site.
17. Define free energy.
18. What happens in oxidative – phosphorylation?
19. Define entropy.
20. What are redox agents?

SECTION- B

ANSWER ANY FOUR QUESTIONS

(4X10=40)

21. Enumerate the properties of water.
22. Explain the urea cycle in detail.
23. Illustrate the B- oxidation of fatty acids.
24. Elucidate the four forms of protein structure.
25. Write a note on the Ramachandran Plot.
26. Derive the Michaelis – Menten equation and give its merits and demerits.
27. Describe the respiratory chain.

SECTION – C

ANSWER ANY TWO QUESTIONS

2X20=40

28. Explain the metabolism of Xenobiotics.
29. Describe the complete breakdown of glucose to CO₂ and H₂O. Give its energy considerations.
30. How are carbohydrates classified? Explain with relevant structures.
31. Write short notes on:
 - a) Allosteric modulation.
 - b) ATP as the “energy currency of the cell.”
 - c) Competitive and non-competitive inhibition.
 - d) Chemiosmotic Theory.
