

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

SUBJECT CODE: 15BY/PC/BC14

M. Sc. DEGREE EXAMINATION - NOVEMBER 2016
BIOTECHNOLOGY
FIRST SEMESTER

COURSE : CORE
PAPER : BIOCHEMISTRY
TIME : 3 HOURS

MAX. MARKS: 100

SECTION – A

ANSWER ALL QUESTIONS:
DEFINE / EXPLAIN THE FOLLOWING.

(20 x 1 = 20)

1. What are biomolecules?
2. State any two distinct differences between animal and plant cells.
3. What are the functions of the cell membrane?
4. Differentiate micro and macromolecules with suitable examples.
5. Define pH.
6. Draw the structure of any one purine base.
7. What are nucleotides?
8. Give the structure of a non - reducing disaccharide.
9. Define biocatalyst.
10. What are allosteric enzymes?
11. Define product inhibition.
12. Define cofactors.
13. What is active site? What is its significance?
14. Give the structure of ATP.
15. Explain the significance of gluconeogenesis.
16. What are the methods by which amino acids are degraded?
17. What is signal transduction?
18. Write the list of metabolic pathways happening in the liver.
19. Give the functions of tyrosine kinase.
20. Explain the term metabolic adaptation.

SECTION – B**ANSWER ANY FOUR QUESTIONS:****(4 x 10 = 40)**

21. Write a note on the markers of cell organelles.
22. Explain the role of the respiratory and renal system in maintaining the pH of the body.
23. What are essential amino acids? Give their structures.
24. Classify the enzymes according to their functions. What are the factors that affect the the rate of enzyme action.
25. Illustrate the Electron transport chain.
26. Explain the Urea Cycle in detail.
27. How does the metabolic pattern of our body adapt itself in fed and starvation state?

SECTION – C**ANSWER ANY TWO QUESTIONS:****(2 X 20 = 40)**

28. a) Classify the polysaccharides, b) Draw a neat labeled diagram of the DNA and explain the bonds in the structure.
29. Explain the use of enzymes in Clinical diagnosis and in the Pharmaceutical industries.
30. Describe the steps in a) Glycolysis, b) β - Oxidation of fatty acids.
31. Write short notes on a) Role of hormones in tissue metabolism, b)Metabolic activities in the muscle tissue.
