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 2018
BIOTECHNOLOGY
FIRST SEMESTER

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

SECTION – A

ANSWER ALL QUESTIONS: **(20 x 1 = 20)**

1. What are macromolecules?
2. State any two uses of the cell wall in a plant cell.
3. What are organelle markers?
4. Define Biochemistry.
5. What are the sugars present in nucleic acids?
6. Define pH.
7. Draw the structure of any one pyrimidine base.
8. Give the structure of a non - reducing disaccharide.
9. What are enzymes?
10. Define feedback inhibition.
11. Expand $NADH_2$ and $FADH_2$.
12. What is the use of the active site?
13. Explain the significance of gluconeogenesis.
14. Give the structure of urea.
15. What happens in transamination?
16. List out the pentoses in the HMP Shunt.
17. What is signal transduction?
18. Why is the liver called the "Chemical Factory" of the body?
19. What is metabolic adaptation?
20. Mention any one metabolic pathway that takes place in the muscle.

SECTION – B

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

21. Draw a neat labeled diagram of the DNA and explain the bonds in the structure.
22. Explain Acidosis and Alkalosis.
23. Classify and illustrate the essential amino acids.
24. Write a note on the classification of enzymes. What are the factors that affect the rate of enzyme action?
25. Illustrate the steps in β – Oxidation of fatty acids.
26. Explain the Urea Cycle in detail.
27. How does the metabolic pattern of our body adapt itself in fed and starvation state?

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SECTION – C

ANSWER ANY TWO QUESTIONS: (2 X 20 = 40)

28. Explain the homo and heteropolysaccharides.
29. Explain the use of enzymes in medical diagnosis and pharmaceutical industries.
30. Describe the steps in (a) Glycolysis (b) Illustrate the Electron transport chain.
31. Write short notes on role of a) Hormones in tissue metabolism and b) Tyrosine kinase.

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