



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY

FIFTH SEMESTER – APRIL 2019

17/16UCH5ES01– BIOCHEMISTRY AND NATURAL PRODUCTS

Date: 24-04-2019

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

Part-A

Answer **ALL** questions.

(10 x 2 = 20)

1. Give an example each for neutral and acidic amino acids.
2. What are active site and allosteric site?
3. Expand the abbreviations, FAD and TPP.
4. Define saponification number.
5. Draw the structure of sucrose.
6. What is rancidity? Mention its types with an example.
7. How is an alkaloid extracted?
8. Write the classification of terpenoids.
9. What is the relation between anthocyanins and flavonoids?
10. What are the types of RNA?

Part-B

Answer any **EIGHT** questions.

(8 x 5 = 40)

11. Write the synthesis of phenylalanine-alanine dipeptide.
12. Explain the C-terminal analysis of polypeptides.
13. Draw and explain the process of dialysis.
14. Explain the competitive and the noncompetitive inhibitions.
15. Discuss the steps involved in the β -oxidation theory of fatty acids.
16. How is the cyclic structure of glucose determined?
17. Describe the double helical structure of DNA.
18. How is the methylpyrrolidine side chain of nicotine elucidated?
19. Write the synthesis of camphor.
20. Describe any one method of synthesis of anthocyanins.
21. How is the stereochemistry of steroids determined?
22. Write a short note on the colour reactions of steroids.

Part-C

Answer any **FOUR** questions.

(4 x 10 = 40)

23. a) Write the classification of proteins based on their solubility.
b) Describe the secondary structure of proteins. (5+5)
24. a) Derive the Michalis-Menten equation for an enzyme catalyzed reaction.
b) Define (i) iodine value and (ii) Reichert-Meissel number. (6+2+2)
25. a) Draw and explain the TCA cycle.
b) Write the differences between amylose and amylopectin (6+4)
26. a) Write a short note on the replication of DNA.
b) Write the structural elucidation of coniine. (4+6)
27. a) Explain the synthesis of geraniol.
b) Write about the colour reactions of anthocyanins. (6+4)
28. a) Write the structural elucidation of cyanidin chloride.
b) Write the biosynthesis of squalene. (6+4)
