



LOYOLA COLLEGE (AUTONOMOUS) CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY

FIFTH SEMESTER – NOVEMBER 2024



16/17/18UCH5ES01 – BIOCHEMISTRY AND NATURAL PRODUCTS

Date: 21-11-2024

Dept. No.

Max. : 100 Marks

Time: 01:00 pm-04:00 pm

SECTION A

Answer ANY FOUR of the following

4 x 10 = 40 Marks

1. How are amino acids classified? List the functions of amino acids.
2. Discuss the lock and key and induced-fit mechanism of enzyme action with neat sketch.
3. Write a note on classification of carbohydrates with examples.
4. List any five differences between DNA and RNA. Explain the types and functions of RNA.
5. Elucidate the structure of cyanidin chloride with any one method of synthesis.
6. Discuss the general methods of structural determination of alkaloids.
7. Write any one method of synthesis for coniine and nicotine.
8. Write short notes on biosynthesis of proteins.

SECTION B

Answer ANY THREE of the following

3 x 20 = 60 Marks

9. (a) Discuss the denaturation and renaturation of protein molecules. (10)
(b) Illustrate the process of urea cycle with neat flow chart. (10)
10. Discuss the following properties of fatty acids.
(i) Acid number (ii) Saponification number
(iii) Auto-oxidation (iv) Reichert-Meissl number
11. Illustrate the process of TCA cycle.
12. (a) Elucidate the structure of papaverine with synthesis. (12)
(b) How is vitamin-A synthesized? Explain. (8)
13. Explain the structure and general methods of synthesis of anthocyanines.
14. (a) Discuss any one method of biosynthesis of cholesterol. (10)
(b) Write a note on nomenclature and stereochemistry of steroids. (10)
