LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

U.G. DEGREE EXAMINATION – **ALLIED**

THIRD SEMESTER – **NOVEMBER 2023**

UCH 3403 – BIOCHEMISTRY FOR BIOLOGY

Date: 08-11-2023 Dept. No. Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

PART-A

*Answer **ALL** questions.* (10 x 2 = 20 marks)

1. What are proteinogenic amino acids?
2. Draw the D and L forms of alanine.
3. State Chargaff's rule.
4. What are the purine bases present in RNA and DNA?
5. What are non-essential fatty acids? Give an example.
6. Define Reichert-Meissl number.
7. What are disaccharides? Give an example.
8. Write down any two industrial applications of carbohydrates.
9. What are alkaloids?
10. Write down any two biologically active natural products.

PART-B

*Answer any **EIGHT** questions.* (8 x 5 = 40 marks)

11. Write the complete classification of amino acids.
12. Illustrate the factors that influence enzyme activity.
13. Discuss the mechanism of enzyme action.
14. Differentiate between double-stranded and single-stranded deoxyribonucleic acids.
15. Describe the significance of enzymes in the process of DNA replication.
16. What are fatty acids? How are they classified?
17. Illustrate the biological importance of lipids.
18. Compare animal and plant fats.
19. Draw the epimers of glucose.
20. Explain the classification of carbohydrates with suitable examples.
21. How are alkaloids extracted from plant material?
22. Discuss the following. (2+3)

    i) Isoprene rule ii) Properties of terpenoids

PART-C

*Answer any **FOUR** questions*. (4 x 10 = 40 marks)

23. Draw and explain the primary and secondary structures of proteins.
24. Illustrate Watson and Crick models of deoxyribonucleic acid.
25. Describe the synthesis of protein by the process of replication, translation and transcription mechanism.
26. Explain the following compounds with structure. (4+3+3)
    (a) Lecithins (b) Cephalins (c) Plasmologens
27. Discuss the following with suitable examples. (5+5)
    (a) inversion of cane sugar (b) mutarotation
28. Write the structure and functions of the following compounds. (4+3+3)
    (a) Camphor (b) Citral (c) α-Pinene

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