LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – **CHEMISTRY**

SECOND SEMESTER – **APRIL 2015**

CH 2955 - BIO-ORGANIC CHEMISTRY

Date : 23/04/2015 Dept. No. Max. : 100 Marks

Time : 01:00-04:00

Part-A

Answer all questions. Each question carries two marks. ***(10x2=20)***

1. What is epimerization of glucose?
2. "Citrulline cycle is energy efficient". Justify.
3. What are nucleosides and nucleotides?
4. Write the phosphorylation reaction of glucose.
5. Give an example for the deamination of amino acid.
6. What are alkaloids? Give the function of an alkaloid.
7. State isoprene rule and show the number of isoprene units in vitamin A.
8. How is atropine synthesized?
9. Write the structure of oestrone and mention any two functions.
10. What are the functions of anthocyanins?

Part-B

Answer any eight questions. Each question carries five marks. ***(8x5=40)***

11. How is the ring size of glucose determined?
12. Explain gluconeogenesis in detail.
13. Discuss the synthetic applications of hemicellulose.
14. Explain the determination of *N*-terminal amino acid sequence by Sanger's method.
15. Explain the catabolism of amino acids by urea cycle.
16. Explain transamination reaction with two examples.
17. Discuss the general methods of determining the structure of alkaloids.
18. Explain the structural elucidation of cocaine.
19. Write a note on "conformational analysis of steroids".
20. Explain the conversion of cholesterol into progesterone.
21. Discuss the colour and constitution of anthocyanins.
22. Determine the structure of cyanidin chloride.

Part-C

Answer any four questions. Each question carries ten marks. ***(4x10=40)***

23a. Explain Kreb's cycle and mention the energy involved in the process.
b. Give one reaction each for *O*- and *C*-glycoside formation. **(6+4)**

24a. Discuss the applications of dextran.
b. Write a short note on the 3 D structure of protein. **(5+5)**

25a. Discuss the separation of protein by dialysis method.
b. Write a note on the Crick-Watson model of nucleic acids. **(6+4)**

26a. Explain the structural elucidation of abietic acid.
b. Write a method to synthesize zinziberine. **(6+4)**

27a. Discuss the mechanism of bio-synthesis of cholesterol.
b. How will you convert cholesterol into androsterone? **(6+4)**

28a. Explain the different steps involved in bio-synthesis of flavanoids.
b. How is isoflavone synthesized? **(6+4)**

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