



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**B.Sc. DEGREE EXAMINATION – ADV. ZOOLOGY AND BIOTECH. & PLANT BIO.TECH.**

**THIRD SEMESTER – NOVEMBER 2016**

**CH 3204 – CHEMISTRY FOR BIOLOGISTS - II**

Date: 10-11-2016

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

**Part-A**

*Answer ALL questions.*

**(10 x 2= 20)**

1. What is denaturation of protein?
2. Define isoelectric point.
3. Draw the structure of cholesterol. Mention any one of its functions.
4. What are complex lipids? Cite an example.
5. Name the purine and pyrimidine bases present in DNA.
6. What is Chargaff's rule?
7. Sketch the structures of D-glucose and L-fructose.
8. Calculate the energetics of glucose metabolism.
9. How is Bordeaux mixture prepared? Mention its uses.
10. Mention the physiological effect of nicotine.

**Part-B**

*Answer any EIGHT questions.*

**(8 x 5= 40)**

11. Describe the secondary structure of protein in detail.
12. Explain the Michaelis theory of enzyme catalysis.
13. Discuss the lock and key model and induced fit theory of enzyme action.
14. Briefly explain the biosynthesis of cholesterol.
15. Write a short note on the following:  
a. Rancidity of an oil    b. Iodine number
16. Discuss the replication of DNA.
17. Describe the double helical structure of DNA.
18. How are carbohydrates classified based on their structure?
19. Write a short note on TCA cycle.
20. Name the terpene present in lemongrass oil. Outline its extraction and give its biological importance.
21. Briefly discuss the structure, isolation and importance of flavones.
22. What are alkaloids? How are they classified?

**Part-C**

*Answer any FOUR questions.*

**(4 x 10= 40)**

- 23a. How are proteins classified based on their structure? (5)  
b. How is the sequence of N-terminal amino acid of a peptide determined by Edman's method? (5)
- 24a. Explain the factors affecting the enzyme activity. (5)  
b. Discuss any two types of enzyme inhibition with examples. (5)
- 25a. Write a short note on steroid hormones. (5)  
b. What are lipoproteins? Discuss the various types and functions of lipoproteins. (5)
- 26a. What are the differences between DNA and RNA. (5)  
b. Discuss the functions of various types and RNA. (5)
27. Write a short note on the following (4+3+3)  
a. Mutarotation            b. Inversion of cane sugar            c. Photosynthesis
- 28a. What are insecticides, herbicides and fungicides? Cite an example for each and mention their uses. (7)  
b. Mention the importance of N, P, K fertilizers. (3)

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