



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

**B.Sc. DEGREE EXAMINATION - CHEMISTRY**

FIFTH SEMESTER – NOVEMBER 2011

**CH 5404 - BIO CHEMISTRY**

Date : 12-11-2011  
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

**Part A**

**Answer all the questions**

10 x 2 = 20 Marks

1. What is a peptide bond? Give an example.
2. Draw the structure of cholesterol.
3. Define mutarotation.
4. What are Ligases? Give an example.
5. Write any two differences between DNA and RNA.
6. What are the differences between cellulose and starch?
7. What are the functions of the nucleus of a cell?
8. What are genetic codes?
9. Write any two functions of mitochondria.
10. Mention any two differences between plant and animal fats.

**Part B**

**Answer any EIGHT questions**

8 x 5 = 40 Marks

11. What are the phospholipids? Explain the types of phospholipids.
12. Explain the factors affecting the activity of an enzyme.
13. What are polysaccharides? Explain the classification of polysaccharides.
14. Discuss the replication of DNA.
15. Draw and explain the structure of t-RNA.
16. Discuss any two hypotheses to explain the mechanism of formation of enzyme-substrate complex.
17. Discuss the energy liberation during cellular oxidation.
18. List out the characteristic features of biological oxidation.
19. Explain the translation process with reference to protein biosynthesis.
20. Draw and explain the structure of hemoglobin.
21. Describe the metabolism of proteins.
22. Write briefly on electron transport system.

### Part C

Answer any FOUR questions

4 x 10 = 40 Marks

23. Draw the changes that occur during one complete turn of the citric acid cycle and explain.
24. Discuss the primary and secondary structure of proteins.
25. What is the overall, balanced chemical equation for glycolysis? Explain the process.
26. a) Write down the differences between Prokaryotic and Eukaryotic cells.  
b) Explain the significance of oxidative phosphorylation. (5+5)
27. a) Draw and explain the double helical structure of DNA.  
b) Discuss any one method to determine N-terminal of an amino acid. (5+5)
28. What is enzyme inhibition? Explain the types of enzyme inhibition.

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