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6. Write a short note on any **three** of the following :

- (a) Active site of Enzymes and its characteristics
- (b) Structure of disaccharides
- (c) Edman method for sequence analysis in peptides
- (d) Significance of DCC and t-Boc in peptide synthesis. (5×3=15)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5716

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Unique Paper Code : 2174001206

Name of the Paper : GE : MOLECULES OF LIFE

Name of the Course : **All Undergraduate Courses
except with Chemistry**

Semester : II/IV/VI

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **four** questions.
3. **All** questions carry equal marks.

1. (a) Usually, ketones do not reduce Tollen's and Fehling's reagents but fructose gives positive test with Tollen's and Fehling reagent. Explain with chemical reactions involved.

(b) Explain the phenomenon of Mutarotation in Glucose.

(c) Explain Lock & Key model and Induced fit Model of enzyme action. (5,5,5)
2. (a) Discuss the carboxypeptidase enzyme method for the C-terminal analysis of peptides.

(b) List the six main groups of enzymes according to the Enzyme Commission. What functions do they perform?

(c) Give the mechanism of formation of glucosazone. Explain why glucose and fructose give the same osazone. (5,5,5)
3. (a) Discuss schematically the solid phase synthesis of a dipeptide Gly-Ala. What are the advantages of solid phase synthesis over other methods?

- (b) Discuss the secondary structure of proteins in detail.

(c) What do you mean by Zwitterion and isoelectric point of an amino acid? Write the structures of Glycine at pH 1, pH 6 and pH 11. (5,5,5)
4. (a) Illustrate the specificity and stereospecificity of enzyme action with suitable examples.

(b) Differentiate between competitive and non-competitive enzyme inhibition.

(c) Explain the effect of temperature and pH on the activity of enzymes. (5×3=15)
5. (a) Discuss the structural differences between starch and cellulose.

(b) Draw the Fischer Projection and Haworth projection formulae for following :
 - (i) β - D-glucopyranose
 - (ii) α - D-fructofuranose
(c) What are reducing sugars and non-reducing sugars? Give one example of each. (5×3=15)