

OLUKUNLE ADEFOLE . O

50 minutes
2 PM
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$$\begin{array}{c} \text{CH}_3\text{COO}^- \\ \text{CH}_3\text{COO}^- \\ \text{CH}_3\text{COO}^- \end{array}$$

Time Allowed: 3 Hours

Instruction: Answer All Questions.

Course Title: General Biochemistry I

1. (a) Using appropriate examples and equations, distinguish between a conjugate base and a conjugate acid.
- (b) What is pH?
- (c) Determine the pH of 0.05 mol. dm⁻³ solution of ethanolamine, given that the K_b value of ethanolamine is 2.8 × 10⁻⁵.

2/ a. Explain the following terms

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- Enantiomers mirror images
 - Anomers functional groups
 - Epimers glucose \Rightarrow galactose
 - Diastereoisomers

1. Show a specific glycosidic linkage in a named sugar

3. a. With appropriate examples, enumerate the functions of nucleotides in the cell.
b. Draw the structure of a named nucleotide. Adenosine
c. Highlight the differences between DNA and RNA.

4. a. Write short note on lipid solubility and structure

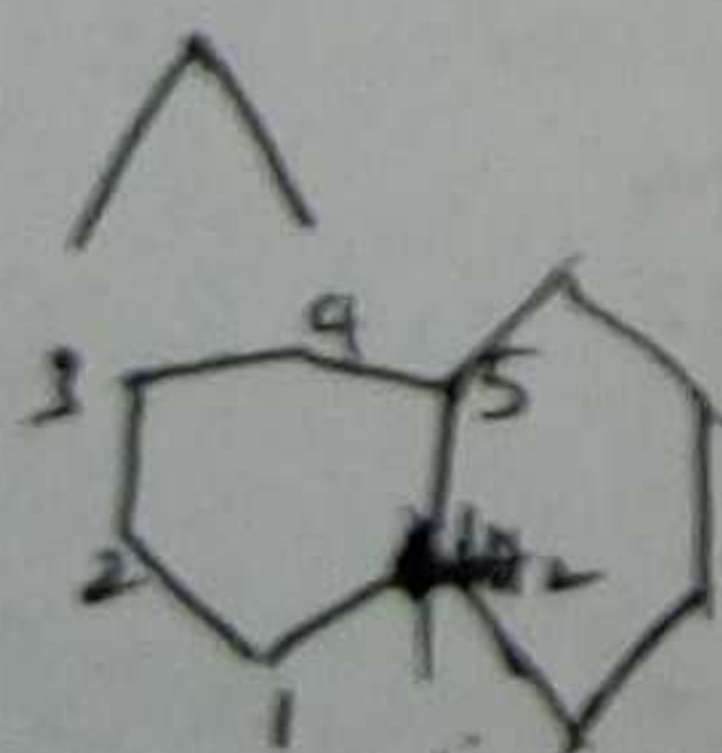
- b. Differentiate between the following pairs

- i. Fats and oils sphingolipid
- ii. Sphingolipid and phospholipid
- iii. Estrogen and androgen \rightarrow 19 carbon keto at
- iv. LDL and HDL
- v. Essential fatty acids and non essential fatty acids.

5. A peptide was identified to contain the following amino acids

Alanine, Valine, Glycine, Histidine, Methionine, Glutamine, Proline

- Classify the amino acids on the basis of polarity
- Using appropriate structures draw five possible peptides that can be formed from the amino acid components
- Name the peptides
- What is the primary bond in the peptides drawn above?
- What other possible bonds may be present in the peptides?



AVL
AVLIMPPT

non polar C5H12

hydro phosphate sm

4A
LAH

σ also
Covalent bond
disulphide bond
phosphate.

14

unsaturated