SET A

Unique Paper Code	:	32175912
Name of the Paper	:	Molecules of Life
Name of the Course	:	**BSc. (H) Generic Elective: Chemistry**
Semester	:	IV
Duration	:	3 Hours
Maximum Marks	:	75

Instructions for the Candidates:

(a) *Write all the particulars as per the instruction on A4 sized blank or rules sheets..*
(b) *All other questions shall carry equal marks.*
(c) *Attempt 4 questions out of 6 questions.*

1. Explain the following:

(a) How do you differentiate between reducing and non-reducing sugars? Give examples.

(b) How will you synthesis dipeptide Ala-Phe with the help of N-protection group t-butyloxycarbonyl?

(c) Draw the structures of the following: *(any four)*

i. Cytidine

ii. Uridine

iii. ATP

iv. α-D-ribose

v. α-D-galactopyranose

(6+6.75+6)

2. Answer the following questions:

(a) What is Iodine number? Calculate the Iodine number of a triglyceride which has the molecular weight of 790 and contains three double bonds. (Molecular weight of Iodine = 127).

(b) How to determine the N-terminal of amino acids by using DNFB reagent of poly peptide chain? Explain with suitable example.

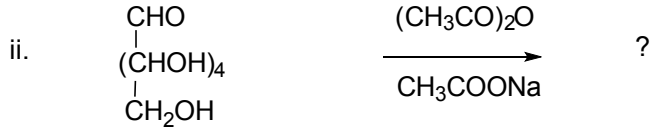
(c) What are carbohydrates? Give the classification of carbohydrates.

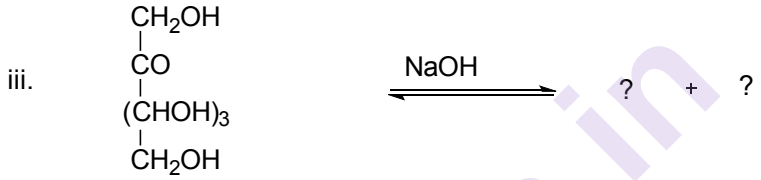
(6+6+6.75)

3. Answer the following:

(a) Complete the following: *(Any four blanks)*

i. 

ii. 

iii. 

iv. 

(b) Write a short note on denaturation of proteins.

(c) Explain the conversion of D-glucose to D-arabinose.

(6+6+6.75)

4. Explain the following:

(a) Differentiate between: *(any two)*

i. Primary and secondary structures of proteins

ii. Omega-3 and Omega-6 fatty acids with structures

iii. Purines and pyrimidines

(b) What are enzyme inhibitors and their significance?

(c) What do you mean by the term metabolism? Explain its components.

(6+6+6.75)

5. Explain the following:

(a) Draw Fischer and Haworth Projection of β-D-fructofuranose and β -D-glucopyranose.

(b) What is mutarotation? What is its relationship with anomers, explain with mechanism?

(c) Genetic Code

6. Write short notes: *(any three)*

(a) Isoelectric Point (explain with respect to acidic and basic amino acids)

(b) Krebs cycle

(c) Carboxypeptidase enzyme in end group analysis in polypeptide chain

(d) Trans fats

(6.25x3)