Vitthalbhai Patel & Rajratna P. T. Patel Science College
Vallabh Vidyanagar
B. Sc. (Semester-VI)
Subject : ORGANIC CHEMISTRY (US06CCHE02)

Date : 11-03-2014 **Internal Test – March, 2014** **Marks : 30**
Day : Tuesday **Time : 3.30 to 5.00 p.m.**
Note: (i) All questions are to be attempted. (ii) Figures to the right indicate marks.

Q.1 Answer the following (Attempt any three) : [6]

[A] Write the structure and name of any four essential amino acids.

[B] **Explain:** Human being gets suffocation in "CO" atmosphere.

[C] Write the hydrolysis of nucleic acid under different reaction conditions.

[D] **Differentiate between:** Nucleoside and Nucleotide.

[E] **Distinguish between :** Triplet and singlet excited state of ethylene molecule.

[F] **Define the term :** (i) Fluorescence. (ii) Phosphorescence.

Q.2 [8]

[A] What is chymotrypsin ? Discuss the mechanism of enzyme action of chymotrypsin.

[B] What are proteins ? Give the broad classification of proteins on the basis of their shape and discuss their properties.

[C] **Explain the term :** (i) Denaturation (ii) Electrophoresis.

OR

Q.2

[A] Discuss Pehr Edman method for *N*-terminal residue analysis. Also give its advantages and limitation. [3]

[B] **Write the synthesis of :** [5]
(i) Ala-Val-Phe using benzyloxy carbonyl method.
(ii) Valine using malonic ester synthesis.

Q.3 [8]

[A] Discuss the primary structure of RNA and secondary structure of DNA.

[B] Discuss the structure of Theobromine. Also give the synthesis of Theobromine from uric acid using Fisher synthesis and Bredereck synthesis.

OR

Q.3 Answer the following: [8]

[A] Discuss the relationship between uric acid and Caffine. How will you determine the position of methyl group in the structure of Caffine ?

[B] Discuss the isolation of Uric acid from human urine. Also give its physical properties. What happen when Uric acid is heated with $POCl_3$?

[C] How will you determine the presence of Alloxan and Allantoin moiety in the structure of Uric acid ?

P.T.O.

Q.4 **[8]**

[A] **Discuss :** Norrise Type- I & -II reactions.

[B] Complete and suggest appropriate reaction mechanism involved in the following reaction :

Benzophenone + Isopropyl alcohol $\xrightarrow[n \rightarrow \pi^*]{h\nu}$ ------.------

[C] Discuss photochemistry of carbonyl compound.

OR

Q.4

[A] Discuss Photo -Fries rearrangement. **[3]**

[B] **Explain the following :** **[5]**

(i) Michler's ketone do not undergo photoreduction in isopropyl alcohol.

(ii) Limitation of Paterno-Buchi reaction giving an illustration.

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