Vitthalbhai Patel & Rajratna P. T. Patel Science College

Vallabh Vidyanagar

B. Sc. (Semester-VI)

Subject : ORGANIC CHEMISTRY (US06CCHE02)

Date : 13-03-2018 **Internal Test – March, 2018** **Marks : 25**

Day : Tuesday **Time : 11.00 to 12.30 p.m.**

Note: (i) All questions are to be attempted. (ii) Figures to the right indicate marks.

Q.1 Choose the correct option for the following : **[3]**

(i) Insulin is a ..... protein.

(a) globular (b) fibrous (c) both "a" and "b" (d) none of these.

(ii) In Purine ..... rings are fused together.

(a) pyrimidine and imidazole (b) pyrimidine and pyridine

(c) pyrimidine and pyrrole (d) pyrimidine and indole.

(iii) For energy transfer between donor and acceptor molecules, the donor molecule should have at least -------- kcal/mole more energy than the energy required to excite the acceptor molecules.

(a) 5 (b) 10 (c) 0 (d) None of these.

Q.2 Answer the following (Attempt any two) : **[4]**

[A] Write synthesis of Phenylalanine using malonic ester synthesis.

[B] Define nucleic acid, nucleotide and nucleocide.

[C] Explain : Triplet excited state of ethylene molecule is more stable than that of singlet state.

Q.3 **[6]**

[A] Write synthesis of Gly-Phe-Ala using benzyloxy carbonyl method.

[B] Discuss the primary structures of RNA & DNA, as well as secondary structures of DNA.

OR

Q.3 **[6]**

[A] Give the broad classification of proteins and discuss their properties.

[B] Discuss P. Edman method for *N*-terminal residue analysis. Also give its advantages and limitations.

Q.4 **[6]**

[A] Discuss the isolation of Uric acid from human urine. What happen when Uric acid is heated with $POCl_3$?

[B] Discuss the structure of Theobromine. .

OR

Q.4 **[6]**

[A] How will you determine the position of methyl group in the structure of Caffine?

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

Q.5 **[6]**

[A] Discuss Photo - Fries rearrangement.

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

$$\text{Benzophenone} + \text{Isopropyl alcohol} \xrightarrow[345\text{ nm}]{h\nu} \text{----------}$$

OR

Q.5 **[6]**

[A] Discuss Norrise Type - I & - II reactions using suitable illustration.

[B] **Explain the following :**

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

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

☺ ☺ ☺ ☺ ☺