



SEAT No. _____

No. of Printed Pages: 2

[15/A-14]

SARDAR PATEL UNIVERSITY**B. Sc. Examination (Sixth Semester)****US06CCHE02 (Organic Chemistry)**

Date: 30-9-2022, Friday

Time: 3-30 to 5-30 PM Total Marks: 70

Note: (i) All questions are to be attempted.

(ii) Figures to the right indicate marks.

Q-1 Multiple choice questions.**[10]**

- In nucleic acid, backbone chain is made up of _____ linkage.
(a) polyether (b) polyamine (c) polyamide (d) polyester
- Which of the following is not essential heterocyclic amino acid?
(a) Proline (b) Hydroxyproline (c) Both 'a' & 'b' (d) Histidine
- The pH at which an amino acid do not have any tendency to migrate under the influence of an electric field is known as its _____.
(a) wave length (b) dipole moment (c) iodine number (d) isoelectric point
- In purine _____ heterocyclic rings are fused together.
(a) Pyrimidine and Imidazole (b) Pyrimidine and Indole
(c) Pyrimidine and Pyrrole (d) Pyrimidine and Pyridine
- _____ gm of uric acid present in 100 ml blood.
(a) upto 0.4 (b) upto 0.3 (c) upto 0.2 (d) upto 0.1
- Papaverine is use in _____ drug.
(a) Antimalarial (b) Antiseptic (c) Antipasmodic (d) Antihistamine
- In quinine both nitrogen atoms are _____ in nature.
(a) 2^0 (b) 1^0 (c) 4^0 (d) 3^0
- Metahemipinic acid is a _____ acid.
(a) mono carboxylic (b) tetra carboxylic (c) tricarboxylic (d) dicarboxylic
- During Intersystem Crossing, triplet excited state (T_1) exists for a period of time _____ sec.
(a) 10^{-5} to 10^{-3} (b) 10^{-11} (c) 10^{-9} to 10^{-6} (d) 10^{-3} to 1.
- For any chemical transformation, a certain amount of energy must be supplied to molecule is known as _____ energy.
(a) activation (b) kinetic (c) rotational (d) vibrational

Q-2 Fill in the blanks.**[08]**

- _____ forms Zwitter ions. (Amino acid / Phenols)
- Insulin is a _____ protein. (Globular / fibrous)
- Uric acid is a derivative of _____. (pyrrole / purine)
- Adenine occurs in the _____ of cattle. (Pancreas / heart)
- _____ alkaloid is present in Opium. (Quinine / Papaverine)
- _____ alkaloid is used as a antimalarial drug. (Nicotine / Quinine)
- If conjugation is introduced in ketone, than the absorption of light shifts at _____ wavelength region. (Shorter / longer)
- In a triplet excited state, electrons are _____. (Unpaired / paired)

(1)

(P.T.O.)

Q-3 Attempt any ten questions of following.

[20]

- 1 Explain : Human beings get suffocation in CO- atmosphere.
- 2 Explain the term peptide.
- 3 What is kind of structure of Silk Fibroin? Write the name, structure and percentage composition of each amino acid present in it.
- 4 Write the synthesis of theophylline from uric acid.
- 5 Draw the chart of product, when nucleic acid undergo hydrolysis of different conditions.
- 6 Write the Murexide test of uric acid.
- 7 How will you convert the veratric acid from p-hydroxy benzoic acid?
- 8 Write Ott's synthesis of Adrenaline.
- 9 Calculate the double bond equivalent of Hygrine.
- 10 Write synthesis of Lactone using ethylacetoacetate.
- 11 Define the terms : **i) Fluorescence** **ii) Phosphorescence**
- 12 Give the list of the principle of photochemistry and also define the term "organic photochemistry".

Q-4 Attempt any four questions of following.

[32]

- 1 Discuss P. Edman method for N-terminal residue analysis. Also give its advantages and limitation.
- 2 Write the synthesis of following:
(i) Lysine using phthalimido malonic ester synthesis.
(ii) Leucine using direct ammonolysis
- 3 What are RNA and DNA? In what way they differ from each other. Also discuss the primary structure of RNA and secondary structure of DNA.
- 4 Discuss the structure of Theobromine . Also give the Fischer synthesis of Theobromine and Brederick synthesis of Xanthine, Caffeine and Theobromine from Uric acid.
- 5 Discuss the extraction method for an alkaloid by using water immiscible solvents. Also give its disadvantages.
- 6 Write the synthesis for the following:
(i) Rabe et.al. synthesis of quinine acid.
(ii) Bido and Wilkinson synthesis of papaverine.
- 7 What is Paterno-Buchi reaction? Discuss its mechanism by using ketone with symmetrical and unsymmetrical olefins.
- 8 Complete the reaction and suggest appropriate mechanism involved in it.
Two moles of benzophenone + Isopropylalcohol $\xrightarrow[n-n^*]{h\nu}$ _____?

—X—