

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VII • EXAMINATION – SUMMER 2015**

**Subject Code:173606**

**Date:08/05/2015**

**Subject Name:Medicinal Chemistry-II & Technology of Sterile Products**

**(Department Elective-VIII)**

**Time:02.30PM-05.00PM**

**Total Marks: 70**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Discuss the biosynthesis of Prostaglandins from Arachidonic acid. **07**  
(b) Write short notes on (a). Solid phase synthesis, (b). Diabetic Ketoacidosis **07**
- Q.2** (a) What is Oxidative decarboxylation? What happens to pyruvate immediately after this reaction? Name the enzymes involved in this reaction. Explain the mechanism of oxidative decarboxylation depicting each step. **07**  
(b) Explain in brief, preparation of Isocyanates from Phosgene. Write the synthesis of 3-Ethyl-4-methyl-3-pyrroline-2-one, a key intermediate of Glimepiride **07**
- OR**
- (b) (i). Outline the synthesis of Niacinamide (non-enzymatic route). **04**  
(ii). Outline the synthesis of Lipoic acid **03**
- Q.3** (a) Justify the statement- 'Biotin is a coenzyme of carboxylase enzymes' **07**  
(b) Explain the formulation of ophthalmics products with suitable examples. Describe the formulation of eye drops in detail. **07**
- OR**
- Q.3** (a) Define the following terms: (a). Amphoteric, (b). Isoelectric point, (c). Peptide, (d). N-terminus, (e). C-terminus, (f). Zwitterions, (g). Ylide **07**  
(b) What are hormones? Give classification and explain different male sex hormones. **07**
- Q.4** (a) Describe the tests performed for evaluation of Parenteral Products **07**  
(b) Write short notes on **any two** (a). Storage of blood and blood products, (b). Role of Vitamin A in Wald's visual cycle, (c). Fmoc protection & deprotection of amino acids **07**
- OR**
- Q.4** (a) Draw (a). the two dipeptides made from Leucine & Cysteine and (b). the amino acids Serine & Tyrosine in their zwitterionic form. **07**  
(b) Give synthesis of : (a). Metformin, (b). Pioglitazone HCl, (c). Glibenclamide. **07**
- Q.5** (a) What are short term and long term complications associated with diabetes mellitus. **07**  
(b) What are the major symptoms of Diabetic mellitus? Explain Structure Activity Relationship (SAR) of Sulfonylureas. **07**
- OR**
- Q.5** (a) What is the difference between "Lente" & "Ultralente" Insulin? Describe in brief Insulin isolation from animal pancreas and its storage. **07**  
(b) Write short notes on (a). Preformulation study for the sterile dosage forms (b). Antithyroid drugs. **07**