

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER- V (New) EXAMINATION – WINTER 2019

Subject Code: 2153601

Date: 21/11/2019

Subject Name: Pharmaceutical Chemistry

Time: 10:30 AM TO 01:00 PM

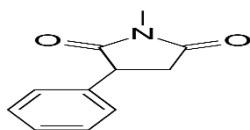
Total Marks: 70

Instructions:

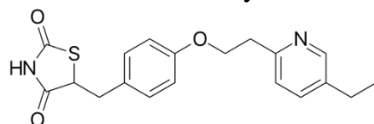
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

MARKS

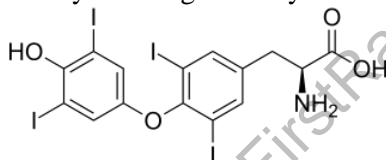
- Q.1**
- (a) What are Antithyroid drugs? Give two examples with structure **03**
- (b) Suggest a commercial root for the synthesis of anticonvulsant drug Phensuximide which is having a 5 membered Pyrrolidine dione ring. **04**



- (c) Write the MOA & Synthesis of Oral anti-diabetic drug- Pioglitazone. **07**

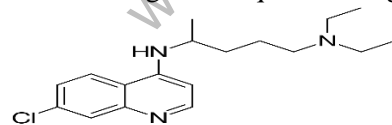


- Q.2**
- (a) Write any four guidelines for choosing a disconnection in organic synthesis by synthon approach. Give suitable examples. **03**
- (b) What are the classifications of Androgens? What are the therapeutic uses of Androgens? Give two examples of Androgens with structure. **04**
- (c) Name the Thyroid hormones and write their functions. Write the synthesis of Thyroid drug-Levothyroxine. **07**

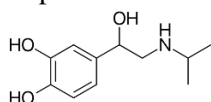


OR

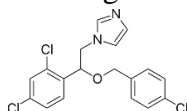
- (c) By disconnection approach, suggest a scheme for the synthesis of anti-malarial drug Chloroquine having a quinoline structure. **07**



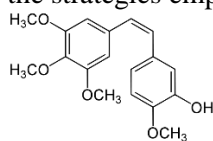
- Q.3**
- (a) By disconnection approach, suggest a scheme for the synthesis of Isoproterenol **03**



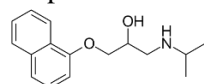
- (b) Write the metabolism of Testosterone. **04**
- (c) By disconnection approach suggest a scheme for the synthesis of Antifungal Econazole **07**



- Q.3** (a) Write any four guidelines for choosing a disconnection in organic synthesis by synthon approach. Give suitable examples. **03**
- (b) By disconnection approach arrive at the starting material for the organic synthesis of the Cis isomer of anti-cancer drug Combretastatin A-4. Discuss the strategies employed to get the Cis isomer **04**



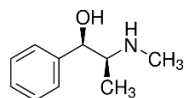
- (c) What are Hormonal Contraceptives? Describe the classifications of Oral contraceptive with suitable examples. **07**
- Q.4** (a) Write down the general names and structures of steroids having 18, 19, 21 and 27 carbons. **03**
- (b) By disconnection approach arrive at a suitable scheme for the synthesis of Propranolol **04**



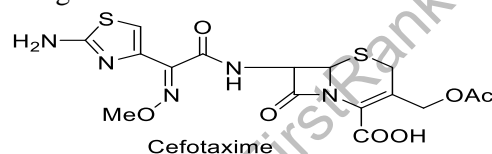
- (c) Write the SAR of Progesterones **07**

OR

- Q.4** (a) Write the structures of following: (1).  $5\beta$ , 19-nor-androst-3-one, (2).  $11\beta, 17\alpha, 21$ -trihydroxypregn-4-ene-3,20-dione. **03**
- (b) Briefly describe Calcium Homeostasis **04**
- (c) Write the synthesis of (1R,2S)(-)-Ephedrine by disconnection approach. Describe the separation of (1R,2S)(-) Ephedrine from the 4 isomeric mixtures obtained from the chemical synthesis. **07**

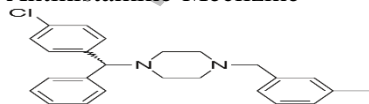


- Q.5** (a) Write the Mode of Action (MOA) & Structural Activity Relationship (SAR) of Sulphonyl Urea class of oral hypoglycaemic drugs. **03**
- (b) Write the metabolism of Oestrogens **04**
- (c) Write the synthesis of third generation Cephalosporin drug-Cefotaxime using 7-ACA **07**



OR

- Q.5** (a) Write the classifications of hormones. **03**
- (b) By synthon approach, suggest a scheme for the synthesis of H1-Antihistamine-Mecizine **04**



- (c) Describe the chemical degradation of Penicillin **07**

\*\*\*\*\*